

NO 4155 451

THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY AM

OPERATIONAL ERROR(U) ARMY COMMAND AND GENERAL STAFF

COLL FORT LEAVENWORTH KS SCHOO W B CALDWELL

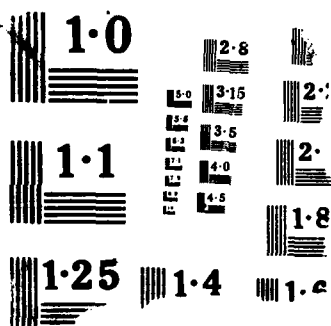
UNCLASSIFIED

12 MAY 88

F/G 5/4

NL

FILED  
MAY 10 1988  
FBI



AD-A195 451

THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY:  
AN OPERATIONAL ERROR

by

WILLIAM B. CALDWELL, IV  
INFANTRY

DTIC  
ELECTE  
JUL 19 1988  
S D  
as D

SCHOOL OF ADVANCED MILITARY STUDIES  
U.S. ARMY COMMAND AND GENERAL STAFF COLLEGE  
FORT LEAVENWORTH, KANSAS

12 MAY 1988

Approved for public release; distribution is unlimited.

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release: distribution unlimited		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE					
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			5. MONITORING ORGANIZATION REPORT NUMBER(S)		
6a. NAME OF PERFORMING ORGANIZATION School of Advanced Military Studies, USAC&GSC		6b. OFFICE SYMBOL (If applicable) ATZL-SWV	7a. NAME OF MONITORING ORGANIZATION		
6c. ADDRESS (City, State, and ZIP Code) Fort Leavenworth, Kansas 66027-6900			7b. ADDRESS (City, State, and ZIP Code)		
8a. NAME OF FUNDING/SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER		
8c. ADDRESS (City, State, and ZIP Code)			10. SOURCE OF FUNDING NUMBERS		
			PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.
11. TITLE (Include Security Classification) The Intermediate-Range Nuclear Forces (INF) Treaty: An Operational Error (U)					
12. PERSONAL AUTHOR(S) Major William B. Caldwell IV, USA					
13a. TYPE OF REPORT Monograph		13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Year, Month, Day) 88/05/12		15. PAGE COUNT 65
16. SUPPLEMENTARY NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number) Intermediate-Range Nuclear Forces, NATO, Pershing II, INF Treaty, Nuclear Weapons, Flexible Response, Arms Control, Ground Launched Cruise Missile, Operational System, Warfighting		
FIELD	GROUP	SUB-GROUP			
19. ABSTRACT (Continue on reverse if necessary and identify by block number) The purpose of this paper is to examine the operational impact of the INF treaty and what it means for the future of NATO. This paper begins with a discussion of the historical use of nuclear weapons in NATO's defensive Alliance. It follows through to the decision in 1979 to modernize NATO's nuclear force. This decision resulted in the deployment of the Pershing II and ground launched cruise missile systems in Europe. The Soviet warfighting concept for Europe is addressed next to place the intermediate-range nuclear forces in their proper perspective. This is followed by a discussion on the operational implications of the INF treaty. The paper concludes by briefly mentioning a few of the "defensive" proposals for the post-INF period. The conclusion of the paper is that the INF treaty is not the panacea of arms control/reduction which so many want it to be. The treaty is, in fact, an operational error. We will find there is not a viable system or defensive posture which can replace the warfighting capabilities provided by the intermediate-range nuclear forces. When the decision was made					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED		
22a. NAME OF RESPONSIBLE INDIVIDUAL Major William B. Caldwell IV			22b. TELEPHONE (Include Area Code) 912-682-7533		22c. OFFICE SYMBOL ATZL-SWV

in 1979 to modernize our nuclear forces there was an operational imperative for the intermediate-range nuclear forces. We need to understand this and insure that we take appropriate measures to fill the gap in the continuum of response. For the NATO strategy of flexible response to be credible, it is essential to preserve adequate forces in the three mutually supporting legs of the NATO triad: conventional, theater nuclear and strategic nuclear forces.

THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY:  
AN OPERATIONAL ERROR

by

WILLIAM B. CALDWELL, IV  
INFANTRY

SCHOOL OF ADVANCED MILITARY STUDIES  
U.S. ARMY COMMAND AND GENERAL STAFF COLLEGE  
FORT LEAVENWORTH, KANSAS

12 MAY 1988

Approved for public release; distribution is unlimited.

School of Advanced Military Studies  
Monograph Approval

Name of Student: Major William B. Caldwell, IV

Title of Monograph: The Intermediate-Range Nuclear Forces (INF)  
Treaty: An Operational Error

Approved by:

James R. McDonough Monograph Director  
Lieutenant Colonel James R. McDonough, M.S.

L. D. Holder Director, School of  
Colonel L. D. Holder, M.A. Advanced Military Studies

Philip J. Brookes Director, Graduate  
Philip J. Brookes, Ph.D. Degree Programs

Accepted this 18th day of May 1988.

## ABSTRACT

THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY: AN OPERATIONAL ERROR, by Major William B. Caldwell, IV, USA, 65 pages.

The purpose of this paper is to examine the operational impact of the INF treaty and what it means for the future of NATO. At this writing, there is considerable debate going on as to whether or not the US Congress should ratify the INF treaty. The political issues are well known and under careful examination. A critical element which still needs to be addressed is the operational impact of the INF treaty. This area may have been neglected because nuclear weapons are viewed primarily as an element of deterrence. Therefore, their warfighting potential is given only minimal consideration.

This paper begins with a discussion of the historical use of nuclear weapons in NATO's defensive Alliance. It follows through to the decision in 1979 to modernize NATO's nuclear force. This decision resulted in the deployment of the Pershing II and ground launched cruise missile (GLCM) systems in Europe. The Soviet warfighting concept for Europe is addressed next to place the intermediate-range nuclear forces in their proper perspective. This is followed by a discussion on the operational implications of the INF treaty. The paper concludes by briefly mentioning a few of the "defensive" proposals for the post-INF period.

This paper concludes that the INF treaty is not the panacea of arms control/reduction which so many want it to be. The treaty is, in fact, an operational error. We will find there is not a viable system or defensive posture which can replace the warfighting capabilities provided by the intermediate-range nuclear forces. When the decision was made in 1979 to modernize our nuclear forces there was an operational imperative for the intermediate-range nuclear forces. We need to understand this and insure that we take appropriate measures to fill the gap in the continuum of response. For the NATO strategy of flexible response to be credible, it is essential to preserve adequate forces in the three mutually supporting legs of the NATO triad: conventional, theater nuclear and strategic nuclear forces.



Accession For	
NTIS CRA&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

## TABLE OF CONTENTS

Section	Page
I. Introduction . . . . .	1
II. Evolution of NATO Nuclear Policy . . . . .	5
III. The Modernization Decision . . . . .	11
IV. Soviet Concept for Warfighting in Europe . . . . .	16
V. Operational Impact of the INF Treaty . . . . .	22
VI. Warfighting Views . . . . .	32
VII. Conclusion . . . . .	36
Appendix A: NATO Communique, December 12, 1979 . . . . .	41
Appendix B: Rationale for PII and GLCM . . . . .	42
Appendix C: INF Treaty . . . . .	43
Appendix D: INF Treaty Missile Data . . . . .	44
Appendix E: Nuclear Systems Allowed by the Treaty . . . . .	45
Endnotes . . . . .	46
Bibliography . . . . .	58

## INTRODUCTION

We (NATO) have given up the most important weapons (intermediate-range nuclear forces) in the sense of deterrence. That was an enormous stupidity, a tremendous step backward for security.(1)

Ewald Heinrich von Kleist  
Editor, Europäische Wehrkunde, 1988

(Christmas Eve, 1990) Warsaw Pact (WP) forces launch an unexpected offensive to secure Central Europe. Achieving surprise at all levels, Warsaw Pact forces plunge deeply into Western Europe before the allies can move to their general defensive positions.(2)

Attacking on multiple axes, in massive strength and having deceived the allies with regard to the date, time, and location of the attack, the mass and speed of the WP onslaught overwhelms NATO forces. Although NATO had indications of a possible WP attack, the North Atlantic Council did not allow deployment to the general defensive positions (GDP) for fear of escalating the situation. Every diplomatic means is being used to diffuse tensions. NATO forces are fighting valiantly, but the numerically superior conventional forces of the WP, and their use of chemical weapons, prevent NATO from establishing a coherent defense.

The Supreme Allied Commander, Europe (SACEUR), understanding the severity of the crisis, immediately requests authority for theater nuclear release. The political leaders, initially paralyzed by the attack, take longer than expected to respond. By the time authority is given, WP forces have penetrated 100 kilometers into Western Europe. With only battlefield nuclear weapon systems in theater to defeat and/or deter WP forces from

further aggression, SACEUR has to determine whether it is worth the cost to "destroy Germany in order to save it," or to resort to all-out nuclear war and escalate to strategic systems.(3)

The two options left SACEUR impaled on the "horns of dilemma." The intermediate-range nuclear force (INF) treaty of 1988 and the decision by NATO, spurred by the West German government, not to modernize the nuclear force were the ingredients which limited the options of SACEUR in defending Western Europe. British Prime Minister, Margaret Thatcher, had stated at the Wehrkunde conference in 1988 that "you don't deter with obsolete weapons." If only the Alliance had realized this also implied, ". . . nor do you have the military capability to fight with inadequate and obsolete weapons."(4)

As of this writing, there is considerable debate going on as to whether or not the US Congress should ratify the INF treaty. The political issues are well known and under careful examination. A critical element which still needs to be addressed is the operational impact of the INF treaty.(5) This area may have been neglected because nuclear weapons are viewed primarily as an element of deterrence. Therefore, their warfighting potential is given only minimal consideration. It is important to understand how NATO got where it is today, what the operational impact of the treaty is, and how NATO should deal with its consequences in the next few years.

The intent of this paper is to examine the operational impact of the INF treaty and what it means for the future of NATO. What are some of the operational capabilities that we will lose when

the treaty is ratified? Are there other alternatives which will give SACEUR an equivalent warfighting capability? What about the numerous defensive proposals which have been discussed for the post-INF treaty period?

The political ramifications of the treaty will not be addressed. This facet will be more than adequately examined during the INF treaty ratification hearings in the US Congress. Nor is the intent of this paper to dampen the prospect for ratification of the INF treaty. Even General Bernard W. Rogers, who has been quite outspoken against the treaty, concedes that it will and should be ratified by the US Congress. He says refusal to ratify the treaty could ". . . be disastrous for NATO as a viable organization and for our capacity as a nation to lead it." (6)

NATO's current nuclear posture is the product of a long and complex chain of events and decisions. This paper will begin a review of the historical use of nuclear weapons in NATO's defensive alliance and the modernization decision to deploy the Pershing II (PII) and ground launched cruise missile (GLCM) systems in Europe. In order to evaluate our warfighting capability, it is also necessary to address the Soviet view of war in Central Europe. Once these points are established we will examine the operational implications of the INF treaty. The paper will conclude by briefly addressing a few of the "defensive" proposals for the post-INF period.

We may find there is not a viable system or defensive posture which can replace the warfighting capabilities of our

Intermediate-range nuclear forces. Perhaps in 1979 when the decision was made to modernize our nuclear forces there was an operational imperative for the PII and GLCM systems. If so, we need to understand this and insure we replace the intermediate-range nuclear forces with a system or posture that will give us the same warfighting capability. For the NATO strategy of flexible response to be credible, it is essential to preserve adequate forces in the three mutually supporting legs of the NATO triad: conventional, theater nuclear and strategic nuclear forces.(7)

There are indications the INF treaty will damage the theater nuclear leg of this triad severely. Failure to acknowledge this and to take appropriate action to remedy the situation could have calamitous consequences for an Alliance which has preserved the peace for almost forty years.

## EVOLUTION OF NATO NUCLEAR POLICY

While NATO continues to proclaim its faith in the declatory policy of Flexible Response, it has in fact mortgaged its defense to the nuclear response.(8)

General Bernard W. Rogers  
SACEUR, 1983

Following the surrender of Germany in 1945, an imposing threat presented itself to the freedom and security of Europe -- the Soviet Union. Between 1946 and 1948 seven countries of Eastern Europe were brought under the sphere of Soviet domination. As the Belgium Prime Minister stated to the United Nations in 1948, "[t]here is but one Great Power that emerged from the war having conquered other territories, and that power is the USSR."(9)

During this same period the Soviet Union imposed a blockade of Berlin and the governments of Turkey and Greece were threatened by communist guerrilla activity. Confronted by the Soviet expansionist tendencies and its refusal to demobilize its armed forces, the nations of Western Europe were forced to recognize the need to "unite their efforts for collective defense and for the preservation of peace and security."(10) This led to the formation of the North Atlantic Treaty Organization in 1949, a defensive alliance designed to prevent aggression, or to repel it should it occur.(11)

The original twelve nations of NATO, however, had minimal forces to insure an integrated defense of the North Atlantic area. There were only 12 divisions, ineffective reserves and fewer than 1,000 operational aircraft. Most of the troops were poorly equipped and trained, deployed not for defense but for occupation.

When compared to the 150 Soviet divisions, NATO forces were incapable of deterring war or fighting a conventional defense.

In the early years it was hoped that NATO would develop strong conventional forces to deter or defeat any aggression in Western Europe. However, in the aftermath of WW II the economies of Western Europe and the US were struggling, and the European social and political disruption was immense. NATO had neither the resources nor the willingness to match the Soviets man for man. Nonetheless, with the invasion of South Korea in 1950, the Alliance redefined itself as a military organization. This restructuring of the Alliance, along with its adoption of a strategy of forward defense, further compounded the requirement for larger conventional forces. Forward defense, as enunciated in NATO's Military Committee report MC 14/1, demanded forces far in excess of the capability of the Alliance. The emphasis was on matching the Soviet Union in conventional forces. To do this the North Atlantic Council determined that 96 divisions and 9,000 aircraft would be required to maintain the peace and security of Western Europe.

But at the Lisbon Conference in February 1952 the Alliance admitted it was not willing or able to pay the economic and personnel costs required to field a force of that size. It revised its force goals to 50 divisions and 4,000 aircraft. But even these numbers were impossible to attain. Steadily the Alliance was developing a strategy that placed primary reliance on nuclear weapons to defend Europe from the outset of any conflict.(12)

The response of the United States to the deficiency in conventional forces was to station US troops in Europe. The Army Chief of Staff, General Lawton Collins, supported this move in testimony to Congress when he stated, ". . . it takes army troops on the ground to repel an invasion on the ground." (13) Six US divisions were sent to Europe to contribute to the defense of the Alliance. The Europeans, however, never fielded the additional 32 divisions called for in the Lisbon force goals and thus set the stage for greater reliance upon nuclear weapons. Until 1952 nuclear weapons had been viewed as a complementary part of deterrence, not as a substitute for conventional forces. (14)

The British, however, saw a much greater need for nuclear weapons than for conventional forces. Whether this was the result of objective military analysis or a rationale for the failure to meet the Lisbon force goals is unknown. What is known is that they found sound logic in the idea of massive retaliation. In 1952 they produced the paper "Global Strategy" which stated:

that in a time of great fiscal restraints, nuclear retaliatory power offered a relatively inexpensive, affordable alternative to a deterrent based on a large standing conventional army and in fact was more suitable for deterrence against the huge, inevitably superior Red Army. (15)

This paper preceded President Eisenhower's "New Look" policy of 1953 that also advocated a greater reliance on nuclear weapons to justify cutbacks in conventional forces. (16)

It was not until 1954 that NATO authorized the use of nuclear weapons, regardless of whether the Soviets used them. The intent to use nuclear weapons was made vividly clear by the Deputy SACEUR, Field Marshall Bernard Montgomery, in late 1954 when he

stated, ". . . [I]t is no longer: They (nuclear weapons) may possibly be used. It is very definitely: They will be used, if we are attacked." (17)

In 1954 the North Atlantic Council decided to introduce tactical nuclear weapons into Western Europe and integrate them into defensive plans. This was done to compensate for the Soviet conventional superiority and to demonstrate that any war would be fought with nuclear weapons from the outset of hostilities. During the next three years, NATO's strategy continued to place greater emphasis on its nuclear posture, which was embodied in NATO's Military Committee report MC 14/2, otherwise known as the doctrine of massive retaliation. MC 14/2 reduced reliance on conventional forces and placed greater emphasis on the use of nuclear weapons. It stated that NATO would respond to Soviet aggression against the Alliance by using nuclear weapons at the outset of any conflict. NATO had determined that its conventional forces would not seek to defeat the enemy on the ground. Instead, these forces would provide the time required to implement strategic nuclear retaliation. (18)

The forward defense by ground forces, or NATO's shield, thus became the "tripwire" for a massive nuclear retaliation against any Warsaw Pact aggression. By 1957, however, the inherent inflexibility of this strategy and its unsuitability in lower level conflicts, combined with the Soviet development of tactical and strategic nuclear weapons, tended to erode its credibility. Since the Soviet Union possessed the means to cause unacceptable damage to the United States, it led many to question, as some do

today, whether it is realistic to expect the United States to use its strategic nuclear forces in response to Soviet aggression in Europe.(19)

During the next ten years the US sought to reassure its NATO allies as to the credibility of its nuclear umbrella. This was done in primarily two ways -- through the development of capabilities and doctrine which would give the President of the US more flexibility in his response to potential threats and by the deployment of nuclear systems in NATO that would "couple" the defense of Europe more closely to the strategic nuclear guarantee of the US.(20) The Europeans, however, were very concerned about the prospect of fighting a conventional or nuclear war on their soil that would not invite an immediate US strategic nuclear response. They were not willing to put greater emphasis on conventional forces because they did not want the capability to fight a prolonged, destructive conventional war. Furthermore, they felt it would weaken the deterrent effect of NATO's nuclear posture.(21)

These contradictory views on the defense of Western Europe and the role of nuclear weapons occupied allied discussion for several years. It was not until 1967 that a strategy accommodating the divergent views and attitudes was agreed upon by NATO. Otherwise known as Flexible Response, MC 14/3 signaled the Alliance determination to resist Soviet aggression at any level and NATO's willingness to escalate the conflict to whatever level was necessary to bring it to an end.(22)

To execute this strategy, NATO developed a triad of mutually supporting forces: conventional, theater nuclear, and strategic nuclear. General Rogers reiterated the importance of this triad in testimony to Congress in 1985 when he stated, "NATO must provide adequate forces for each leg of its triad to sustain the necessary deterrent balance of forces with those of the Warsaw Pact." (23)

NATO strategy has relied on nuclear weapons to compensate for its deficiency in conventional forces since the inception of the Alliance in 1949. The fact that two legs of the triad which support Flexible Response are nuclear only serves to reinforce this view. There is no question in the SACEUR's mind that, if attacked, NATO eventually will have to employ nuclear weapons. The guidance to SACEUR from the political authorities is, ". . . before you lose the cohesiveness of your defense, i.e., subject to deep penetrations, you must request release of nuclear weapons . . . ." (24)

To maintain an effective warfighting capability, and in turn, a credible deterrent, the Alliance periodically must modernize the triad of mutually supporting forces. By the mid 70's, the Alliance recognized the need to modernize the theater nuclear leg of its triad. A decision was made in December 1979 to both modernize the nuclear force and pursue arms control negotiations, (Appendix A). This "dual-track" decision has led to the possibility of eliminating all intermediate-range nuclear weapons in Europe.

## THE MODERNIZATION DECISION

NATO's Euromissiles (INF) were deployed not to counter the new Soviet SS-20s - though this was the way the stationing was sold to European publics - but rather to fill the gap in the spectrum of deterrence . . . . (25)

General Bernard W. Rogers  
SACEUR, 1987

In 1975, Secretary of Defense, James R. Schlesinger, submitted to Congress a report entitled The Theater Nuclear Force Posture in Europe. The report contained a series of modernization programs which called for improvements in the accuracy, deployment, survivability, targeting doctrine and employment procedures of the nuclear force structure in Europe. (26) Although these modernization proposals were discussed by NATO's Nuclear Planning Group (NPG) no definitive action was taken at that time.

It was not until 1977, in a speech by Chancellor Helmut Schmidt, that concerns over NATO's security and the balance in strategic nuclear forces were brought to the forefront. In discussing the implications of SALT I, Schmidt said that any arms limitations between the US and the Soviets would "impair the security of the Western European . . . Alliance vis-a-vis Soviet military superiority in Europe if we do not succeed in removing the disparities of military power in Europe . . . ." (27) There has been considerable debate over what Chancellor Schmidt intended to imply by his speech. Did he intend to elicit a response or was he just vocalizing his frustration and concern over US policy towards Europe? Whatever his intention, his

speech did serve as the catalyst for an in depth review of NATO's defensive posture.

As part of this review, the NPG created the High Level Group (HLG) to examine the need to modernize NATO's nuclear forces. In deference to West German apprehensions, the group focused on long-range forces and within a year reached a consensus that long-range nuclear force modernization was necessary and that it should provide NATO the capability to strike targets in the Soviet Union. Unfortunately, the remainder of the modernization program, the issues dealing with deployment, employment and declaratory policy, were never adequately addressed. Failure to address these issues initially left the "flank" of the Alliance decision for modernization exposed, a flank the Soviets were able to exploit. Perhaps if NATO had adhered to Carl von Clausewitz's dictum that one should never start a war unless he knows how he wants it to end, then NATO would have never modernized the force without first thinking through exactly how these systems would be utilized.(28)

The HLG made the decision to modernize NATO's long-range nuclear forces to eliminate the gap in the spectrum of deterrence, and thus to strengthen NATO's strategy of flexible response. Adhering to NATO's "General Political Guidelines for the Employment of Nuclear Weapons" the HLG realized the need for ". . . the ability with land-based, theater nuclear weapons to hold at risk - with certainty - military significant targets deep in the Soviet homeland."(29) This was the primary reason for the decision to modernize the nuclear forces. The HLG was also

concerned about the credibility of NATO's deterrent, especially with the Soviet achievement of strategic nuclear parity, the decline in the effectiveness of NATO's long-range nuclear assets (F-111/Vulcan aircraft), and obsolescence in existing land based systems.

During the political debates over the need to modernize NATO's nuclear force, the original objective was lost. The criteria for land based theater nuclear weapons to hold Soviet targets at risk were not discussed. The NATO countries failed to explain to their people that there was a need for modernization in order to eliminate the gap in the strategy of flexible response. Instead, it was easier to argue the need for modernization as a response to the modernization of Soviet nuclear assets, especially in light of the then recent deployment of mobile SS-20 missiles and Backfire aircraft.(30)

This emphasis, unfortunately, has contributed to the ambiguity surrounding the decision to modernize the force. If there was a deficiency in NATO's strategy, then modernization was necessary irrespective of other developments. If, however, the decision was made in response to the modernization of Soviet nuclear systems, then negotiations were the most logical course of action to pursue.

The underlying rationale was obscured in the NATO communique of December 12, 1979, (Appendix A). Otherwise known as the "dual-track" decision, the communique stated the "Ministers have decided to pursue these two parallel and complementary approaches . . . modernization and arms control." The emphasis in this

document is on negotiation: "NATO's TNF (theater nuclear forces) requirements will be examined in the light of . . . negotiations." (31) It stresses the need for NATO to redress the imbalance in its nuclear posture, but allows this to be accomplished through negotiation.

Perhaps this was the only politically acceptable means by which NATO could obtain the support of its people to modernize its nuclear force. Unfortunately, it was also to be the "seed of disaster" for the intermediate-range nuclear force. If the WP had agreed unilaterally to withdraw its SS-4, SS-5 and SS-20 missile systems, would there have been a need for the NATO communique of December 1979? Events today would answer this question in the affirmative. Negotiation, however, loses sight of NATO's original objective for the modernization of the force -- to create the capability to hold Soviet forces at risk throughout the depth of their deployment. (32)

The zero-option proposal which President Reagan made in 1981 was a politically astute move to sustain European public support for modernization, but it had no military basis. The proposal was a return to NATO's 1979 posture with a significant gap in its strategy of flexible response. Although the Soviets initially declined the proposal, once NATO progressed with its modernization the Soviet Union reconsidered and accepted. The Soviets realized that with the zero-option NATO stood to lose a capability and gain a major constraint on future NATO conventional defenses, while they would only give up a system. (33) Seen in this light, it becomes clear why the INF

treaty ratification deliberations are focused on the political implications, to the neglect of the operational capability which the intermediate-range nuclear forces gave NATO.

The NATO Charter states that NATO was designed to ". . . safeguard the freedom, common heritage and civilization of [its] peoples . . ." If this charter is to be fulfilled then the military commanders must be afforded the means to accomplish the end state, that being "the preservation of peace and security."<sup>(34)</sup> Therein lies the real debate for the post-INF treaty period. What means is NATO sacrificing in the INF treaty and what will be the operational impact?

Before we can adequately examine the operational impact of the treaty it is imperative to understand the "enemy".

Clausewitz states that

to overcome your enemy you must match your effort against his power of resistance, which can be expressed as the product of two inseparable factors, viz. the total means at his disposal and the strength of his will.<sup>(35)</sup>

It is, therefore, necessary for us to explore the "will" and the means of the Soviets to prosecute a war in Central Europe.

## SOVIET CONCEPT FOR WARFIGHTING IN EUROPE

. . . In the training of the armed forces, ever greater attention will now be paid to the task of preventing any military conflict from developing into a nuclear war.(36)

D. F. Ustinov, 1982  
Soviet Minister of Defense

In 1986 General Secretary Gorbachev made a proposal to eliminate all nuclear weapons in a gradual process that would be completed by the year 2000. This proposal reflects a definitive shift in Soviet military doctrine from its traditional nuclear warfighting and war-winning doctrine of the 1960's.

Consequently, it is reasonable to question the sincerity of such a plan. Is this proposal a genuine desire for substantial disarmament or do the Soviets have a long range program to make war in Europe more predictable?(37)

The Soviets, unlike NATO, do not view the use of nuclear weapons primarily as an element of deterrence, but as a warfighting capability. They have developed, produced and deployed nuclear forces in response to specific requirements within their concept of offensive operations. At the Division, Army, Front and Theater level, ground launched nuclear capable systems have been assigned specific objectives to hit deep in NATO's rear. By exploiting the effects of these systems, Soviet commanders at each level could maintain the momentum of the attack and achieve the rates of advance necessary to defeat NATO forces.(38)

The present INF treaty (Appendix C) would seem to hinder the ability of the Soviet commanders to attain their objectives since the Army, Front and Theater level nuclear capable systems would

be eliminated. However, the Soviets made a conscious decision in the late 1960s to use artillery and air assets in lieu of nuclear weapons. Although initially unsuccessful at conducting deep strategic penetrations without nuclear assets (Dnieper 67), they continued to conduct conventional offensive military training maneuvers. In 1981 (ZAPAD 81) the Soviets demonstrated the ability to strike deeply into NATO's rear using only conventional forces. Their military doctrine changed at this time to recognize this non-nuclear initial period of war.(39)

The current SACEUR believes he can only guarantee two weeks of a conventional defense and then he will escalate to nuclear weapons.(40) The Soviets want to block the NATO political structure from making this decision to use theater nuclear weapons. The Alliance Charter, however, gives each nation the right to act independently of the others. This is especially true of the nuclear forces of Great Britain and France which could be employed at any time. Although it is unlikely that a member nation would act without consultation, there is no stated requirement to do so. Of particular concern to the Soviets is the 1986 NATO agreement on 'general political guidelines' for the use of nuclear weapons. This document provides SACEUR the "guidance to carry out strikes against Soviet homeland targets . . ."(41)

Given the uncertainty as to the employment of nuclear weapons by NATO, it is in the Soviets' interest to denuclearize Central Europe. This would be especially advantageous since the intermediate-range nuclear forces allow NATO to hold Soviet

formations at risk throughout the depth of their deployment. With the INF treaty, however, the Soviets could fight their preferred form of warfare in Central Europe, a non-nuclear lightning offensive.

General Secretary Gorbachev's proposal for a nuclear free world was followed by a renewed "plea" in 1987 that the "future security" of the world should be a "nuclear-free one." He stressed that there is now an opportunity to ". . . free our common European home from the nuclear burden . . . .," a plea which has not gone unnoticed by the Western European nations.(42) Many West Germans are concerned that the INF treaty will increase the possibility of nuclear war in their country (because of the short range of battlefield nuclear weapons), while lessening it for everyone else. In fact, pressure is being applied to the Kohl governing coalition to insist that NATO agree to cut back or even eliminate battlefield nuclear weapons (the third zero).(43) Needless to say, the Soviets are fanning such concern since it would create an environment conducive to their objective -- a nuclear free Europe that would support their preferred form of warfare.

The Soviet Union does not want to fight a nuclear war in Europe. With the INF treaty "in hand", Soviet publications already are advocating reductions in dual-capable aircraft (DCA). This would be another step toward the denuclearization of Europe since DCA are the principal long-range nuclear delivery systems remaining in NATO after the treaty.(44) The Soviets have accepted the premise that a non-nuclear war in Europe is possible

and "winnable", and have, therefore, set in motion those actions necessary to support their military doctrine.

To execute their doctrine the Soviets are working diligently to attain the required conventional superiority. This would allow them to achieve their goals through intimidation or, if necessary, the use of non-nuclear military force. The Chairman of the Joint Chiefs of Staff, Admiral W. J. Crowe, recently expressed deep concern about the WP conventional superiority.

The Warsaw Pact forces have outproduced us (NATO) . . . in the decade since 1977 . . . (and now) there is a very substantial imbalance in tanks, armored vehicles, artillery, mortars and aircraft.(45)

He stated that in order to achieve this massive build up the Soviets devote a large portion of their national resources (15 to 17 percent of their GNP) for military expenditures.

This is not to say the Soviets intend to start a conventional war. They would prefer to attain their objectives through intimidation or blackmail. James Schlesinger recently stated, "[I]n the absence of the nuclear deterrent, the Eurasian continent would be dominated by the nation with the most powerful conventional forces."(46) There are many Western officials who overlook this possibility because they want to believe that the Soviet policy of "glasnost" will require major cuts in Soviet conventional forces to aid the fragile Soviet economy. They are only looking at the political consequences of eliminating nuclear weapons and have failed to address the military implications.(47)

Conventionally, the Soviets are attaining the correlation of forces necessary for successful offensive operations. Perhaps Chairman Brezhnev's 1982 declaration of no-first use is less a

policy of restraint than an indication that the Soviets now believe their conventional forces are capable of winning a non-nuclear war in Europe. In 1984 Colonel General M. A. Gareyev, Deputy Minister of Defense, insured the incorporation of the conventional option into Soviet military doctrine. This was further evidence of their preferred form of warfare.(48)

The most obvious change in Soviet military doctrine was the restructuring of the armed forces in 1986, when it split into two mission-oriented arms: the Strategic Nuclear Forces, which includes all nuclear forces; and the General Purpose Forces, which includes all forces equipped with non-nuclear weapons, such as ground forces, air defense, aviation and naval forces. This new structure will optimize the organizational capability of the general purpose forces to conduct non-nuclear offensive operations.(49)

The US and its European allies should question more closely why the Soviet Union is so ready and willing to eliminate all nuclear weapons in Europe, but without concurrent conventional force and chemical weapon reductions. The Mutual and Balanced Force Reduction (MBFR) talks on conventional forces have been in progress for over 15 years, yet there have been no force reductions. One reason may be that the Soviets do not want to concede their conventional force superiority, especially if they can denuclearize Europe.

General Secretary Gorbachev realizes that if the INF treaty is ratified it may initiate the "slide" toward denuclearization of Europe. If he can continue this trend, while maintaining a

conventional force superiority, the Soviets will attain the ability to prevail over NATO in a non-nuclear offensive or achieve domination of Western Europe without having to "fire a shot." (50)

Once the INF treaty is ratified, Europe will be a much "safer" theater for conventional warfare. Only ten years ago the Soviets were successful in preventing the modernization of NATO's nuclear force with neutron warheads. They have no reason to believe they will not achieve their aims this time. Even now, with a fair assurance that the INF treaty will be ratified, the Soviets have redirected their efforts to undermine NATO's attempts at modernizing the remainder of its nuclear force. The Soviet Foreign Minister recently told West German leaders that "NATO proposals for new tactical nuclear systems scuttle all recent progress in disarmament and can not be allowed." (51)

The Soviets have coordinated their actions to play the members of the Alliance against each other. This has been accomplished by making proposals that appeal to the general public, but will actually undercut NATO's security. The INF treaty is an excellent example. It is an unprecedented opportunity to reduce the number of nuclear weapons in Europe and has, therefore, received undeniable public support throughout the Alliance. How could there be anything wrong with a treaty where the Soviets will destroy four times as many missiles as NATO? (52) To answer this question it is necessary to discuss the operational impact of the INF treaty.

## OPERATIONAL IMPACT OF THE INF TREATY

The INF treaty sets us on a slippery slope, and we will not stop sliding until Germany is denuclearized, neutralized and demilitarized.(53)

Evan Galbraith  
Former Ambassador to France, 1981-1985

There is considerable euphoria within our national capital over the prospect of ratification of the INF treaty and the ramifications for future arms control negotiations. Secretary of State, George P. Shultz calls the INF treaty ". . . an achievement without precedent in the history of arms control."(54) Will this treaty indeed bring peace and security to Europe, or has arms control, in this case, become an end in itself?

The operational impact of the INF treaty has yet to be addressed adequately. There are some, such as Ambassador Galbraith, who oppose the treaty. He recognizes that public opinion is against his stance, but as Churchill did after Munich, he knows it is his responsibility to present an honest assessment. Perhaps then the PII may be retained.(55) But is he correct? Even the President's chief military advisor, the Chairman of the Joint Chiefs of Staff, has assured Congress that the treaty has the full support of the Joint Chiefs and of senior NATO military commanders.(56)

Unstated in such testimony is what must be done to compensate for the limitations imposed by the treaty. In 1983, while advocating the need to deploy the PII and GLCM systems, General Rogers stated that the deterrent strategy of flexible response was still valid if buttressed by an adequate capability for each

leg of the triad with adequate military strength in conventional, theater nuclear and strategic nuclear forces.(57) The PII and GLCM systems were deployed to address the deficiency in the theater nuclear leg. Four years later, however, the requirements seem to have changed.

In 1987, while addressing the impact of the INF treaty, General Galvin, SACEUR, stated, "NATO's strategy of flexible response will still be valid; however, the means to implement NATO strategy will require buttressing."(58) The indication is that NATO's strategy of flexible response is indeed "flexible", and that with some "buttressing" (read substitution of nuclear weapon systems) the strategy will still be valid. At this point the question becomes whether the end justifies the means, or has the treaty become an end in itself? The answer is vital since the INF treaty will leave NATO with fewer nuclear capable systems and no guarantee that remaining nuclear weapons will be modernized.(59)

NATO's strategy of flexible response was devised to allow NATO to respond appropriately to any level of potential WP aggression while posing the risk of escalation to higher levels of conflict. In order to accomplish this, NATO envisions three stages of response: direct defense, deliberate escalation and general nuclear response. The goal is not to defeat WP forces but rather to defeat WP prospects for achieving victory in Western Europe. The first stage, direct defense, is viewed as the employment of conventional forces to counter WP aggression at

the time and place it occurs. Nuclear weapons would only be employed in response to their use by the WP.

The next stage is deliberate escalation, occurring when the continuity of NATO's defense or loss of NATO territory is threatened. Selective nuclear weapons are employed to attain some military advantage, not merely as a demonstrative show of force. The objective is to halt the WP advance, regain any lost territory, and persuade the WP to call off its attack. The PII and GLCM systems provided SACEUR with the operational capability to respond to WP aggression during deliberate escalation. With the ratification of the INF treaty this capability will be eliminated, opening a "gap" along the continuum of response.

The INF treaty will eliminate all missiles with a range of between 500 and 5500 kilometers (Appendix C), leaving SACEUR with Lance and Nike Hercules as the only ground launched missiles to strike targets beyond 30 kilometers. Although the 1983 Montebello Decision called for the modernization of NATO's nuclear forces, five years later the only substantial modernization within the theater was the initial deployment of the PII and GLCM systems.(60) Now with the INF treaty, NATO will find itself left with mostly aging, obsolete nuclear systems (Appendix E). SACEUR is losing his means for the second stage response of deliberate escalation.

According to B. H. Liddell Hart, sound strategy is dependent on coordination of means to ends.(61) For forty years NATO has maintained the proper relationship, preserving the peace. But the ultimate test is whether, in the event of war, peace can be

restored on politically favorable terms at acceptable cost. It is within this warfighting realm that the operational impact of the INF treaty will be addressed.(62)

In order for a weapon system to have an operational impact, its fires must impact decisively on major operations of the campaign. There are few situations where the employment of limited numbers of conventional weapon systems would have a decisive impact. Compared to the PII and GLCM systems, most conventional weapon systems possess minimal range, lethality, penetrability, speed and, in some cases, accuracy. Perhaps in Central Europe only nuclear weapon systems can have a decisive impact on the battlefield.(63)

Although precision guided munitions could have a major impact, they lack the lethality of nuclear weapons. Similarly, massed artillery systems produce high lethality, but they are in short supply in Europe. General Glen Otis, Commander, US Army Europe, recently acknowledged this critical shortage.(64) It would be difficult to justify substituting conventional artillery systems to fill the role of our nuclear forces when there are not enough of them to support the conventional battle.

Nuclear weapons are in a class by themselves. They are considerably more powerful, more immediate and more psychologically devastating, and more politically destabilizing than any conventional weapon. Their effects are horrific. Blast effects alone are pulverizing. Thermal radiation, or heat, causes burns and fires a considerable distance from the point of detonation. The radiation effects are highly penetrable,

invisible, and lasting. There is a distinct firebreak between conventional and nuclear weapons. They are not interchangeable.

However, to imply that all nuclear weapons could have an operational impact on the battlefield is misleading.(65) It is doubtful that the 3,000 plus artillery fired atomic projectiles (AFAPs) in the NATO inventory could inflict damage that would have an operational impact. Given their limited range, they can only be employed against combat formations at the tactical level, with relative attrition being the sole measure of success or failure. If they succeeded in destroying critical elements, such as the command and control (C2) elements of a WP regiment, it would have only minimal effect on the tactical battle. Once WP forces are moving and engaged, minimal guidance is given from above. If the intent is to cause the WP to halt its attack, it is necessary to strike deep where forces are echeloned. The echelonment of WP forces is what gives them the ability to overcome front line losses from NATO's defense. Only the PII and GLCM systems had the ability to strike with assurance throughout the depth of WP deployment.(66)

Another problem arises with the proximity of nuclear capable artillery systems: they can be overrun before receiving authorization for nuclear release. This in turn leads to the concern that lower level unit commanders might use these systems prematurely, because of the "use it or lose it" syndrome. When the Lance and Nike Hercules are compared to the AFAPs the situation is not much better. These aging systems have a larger circular error probable (CEP) and higher collateral damage than

the AFAPs. Their fourfold range advantage does not make them operational systems. That requires a decisive impact upon the conduct of a major operation or a campaign, something they do not have.(67)

The deployment pattern of the PII and GLCM systems provides a distinct advantage over all other ground launched systems. Due to their extended range and responsiveness they are deployed in a dispersed manner within NATO, with many systems being located well to the rear where they are far less susceptible to being overrun. Their mobility enhances their survivability by making it difficult for the Soviets to target them. Such survivability in turn provides additional time for the political leaders to make the decision to employ them.(68)

For operational fires to be effective they must be planned "top down", in contrast to normal fire support which is driven from "bottom up." Elimination of the intermediate-range nuclear force will vitiate detailed top down planning because of the limited range of the remaining nuclear systems.(69) Logically, the local commander can best determine where to employ tactical nuclear weapons. Their employment would not be driven from the top down. Nuclear fires would be decentralized. Their effects could not be operational.

Another distinguishing feature of operational fires is that they normally are provided by systems not required for routine support of the battlefield. The PII and GLCM systems were deployed to NATO as operationally pure systems. They were not to be used in a dual-capable role. They were to be used strictly as

nuclear weapon systems. This single mission role enhanced the warfighting capability of the Alliance. It provided responsive, dedicated munitions that were poised to execute nuclear missions. The other nuclear capable systems in theater, artillery and air, were deployed to serve in a dual-capable role, representing competing demands between their use in the conventional battle and in their preparation for delivery of nuclear fires.(70)

In the Central Region there is a need to relieve the burden on dual-capable aircraft (DCA) by providing ground launched missiles that can strike deep targets. The NATO planning guidance identified 1,800 targets for elimination. Ten percent of these are considered high priority targets.(71) Given their capabilities, the PII and GLCM systems, not DCA, are preferred.

DCA have significant liabilities which make them unsuitable for deep strike missions. They can engage only a minimal number of targets per sortie; they lack the ability to control weapons to target; and they have limited capability at night and in poor weather. Furthermore, DCA will experience high loss rates trying to penetrate WP air defenses. Moreover, DCA based in Europe are tied to a relatively small number of vulnerable airbases which might be knocked out early. The INF treaty will leave the SACEUR with DCA as his only deep strike asset, thereby immediately limiting his conventional air campaign.(72)

Emerging technology promises NATO the ability to anticipate the location and movement of WP forces. Using the extremely accurate and time sensitive PIIs, NATO is able to strike at key choke points deep within Eastern Europe to disrupt, delay and

destroy WP forces before they can be brought to bear against NATO forces. This provides a more favorable correlation of forces for NATO, and makes the Soviets hesitate before thinking about executing an attack against the Alliance.

The PII and GLCM systems qualify as operational systems because of what they are intended to achieve. So too are our air delivered nuclear munitions. The intent of these operational forces is to isolate the battlefield by interdicting logistical nodes or uncommitted forces and by destroying critical functions and facilities having an operational impact. SACEUR would use these fires to delay the concentration of WP forces and to separate successive echelons, resulting in their vulnerability to counterattacks. To be operationally significant they would be combined with other operations to constrain the enemy's freedom of action while giving NATO ground forces greater relative mobility.(73)

Clausewitz stated that defense is the stronger form of war, but only if one takes advantage of the position to inflict "well directed blows" against the enemy. The use of operational fires in the defense must hasten WP forces to their culmination point. There would be no advantage, and every risk, for the WP to continue offensive operations beyond that point.(74) By striking operational C2 systems, mobility assets, air defense capabilities and nuclear weapon systems, intermediate-range nuclear forces could have upset the WP's timetable.

Consider operational depth: the WP has it and can use it to bring large conventional forces to bear in an offensive. NATO

forces, however, do not have operational depth and must attempt to attain it by striking deep targets across the Inter-German border (IGB). The INF treaty, however, will restrain NATO's ability to do this with other than DCA, giving the WP a distinct advantage. Communist forces could mass at ranges beyond 500 km with minimal interference from NATO, particularly in light of their formidable air defenses. NATO is not afforded the same opportunity; the distance from the IGB to the English Channel is less than 500 km, the maximum allowable range for remaining nuclear missile systems.

The Soviets will not lose an operational capability with the INF treaty. Conversely, they will improve their relative military advantage over NATO. The Soviets will still have the capability to target Western Europe with a vast array of non-strategic ground launched missiles that can reach nearly every airbase and port in West Germany, Belgium, and Holland. The SS-25, which is still allowed by the INF treaty, can strike every target presently covered by the SS-20.(75)

What is NATO's operational concept for the employment of its nuclear systems? Since the AFAPs are to be used in support of the immediate battle and the Lance has a range of only 125km, there are no forces other than DCA that can be used to achieve a decisive operational impact. The critical linkage, therefore, between the employment of these tactical forces and the strategic aim is missing. If the operational level commander controlled nuclear systems that could achieve an operational impact, he could then direct the employment of these systems to prosecute a

successful campaign. The PII and GLCM systems give SACEUR this capability. With the INF treaty the number and type of battlefield nuclear weapon systems remaining in Europe (Appendix D) will not provide SACEUR the same warfighting capability the PII and GLCM systems did.

With the decision to eliminate the PII and GLCM systems, NATO surrenders its only operationally pure ground launched missile system. This decision impacts upon the strategy of flexible response since the PII and GLCM play a prominent role in its second stage, deliberate escalation. Once the INF treaty is ratified, it is questionable whether SACEUR will have the means to restore peace on politically acceptable terms and at an acceptable cost. General Galvin is aware of this deficiency and, therefore, has stressed the need to "buttress" the nuclear forces in NATO to replace the void that will be left by the elimination of the PII and GLCM. Proposals include developing more AFAPs, modernizing the Lance, and deploying air-to-surface standoff missiles. If these measures are implemented they will enhance the warfighting capability of NATO. But they will not provide the same capabilities as the PII and GLCM.(76)

## WARFIGHTING VIEWS

The Soviet challenge to peace and freedom in the West is undiminished.(77)

General John R. Galvin  
SACEUR, March 1988

Numerous other proposals have been offered as to how best defend Western Europe in the post-INF period. Some of these call for the elimination of all nuclear weapons in central Europe and reduction in conventional forces. Others propose using strategic nuclear forces as a substitution for the intermediate-range nuclear forces. The purpose of this section is to address some of these proposals and explain why they do not provide the same operational capability as the intermediate-range nuclear forces.

The concept of a sea based nuclear defense, using sea launched cruise missiles (SLCMs) and/or submarine launched ballistic missiles (SLBMs), is one proposed alternative. They are difficult to target, provide the same strike capability as the GLCM, and avoid the political controversy over basing. Despite these key attractions, however, there are several detractors. A launch by SLBMs could be interpreted by the WP as a strategic nuclear strike. There is no way to distinguish between a SLBM launched by SACEUR for theater purposes from those reserved for the strategic arsenal. A Warsaw Pact launch on warning could lead to a strategic nuclear exchange.(78)

There are other problems as well -- slow reaction time, lengthy time of flight, minimal risk-sharing, political controversy heated by recurrent port-calls, complication for arms control, and the cost of developing or modifying existing naval platforms. Moreover, sea launched weapons do not have the

enhanced deterrent value that land based missiles provide. Ground launched systems "couple" the US and Europe in an unmistakable fashion. There can be no question that a ground attack against NATO would be responded to with ground launched systems.(79)

Another proposal is a nuclear weapons free zone (NWFZ), which recognizes nuclear weapons in Europe but creates a 150-300km wide zone between NATO and the WP in which no nuclear weapons could be deployed. The intent is to reduce the risk of precipitous, accidental, or pre-emptive use of nuclear weapons and eliminate the "use it or lose it" approach towards battlefield nuclear systems. Advocates say it enhances national security. But does it really reduce the risk of war or merely provide an illusion of greater security? General Rogers believes it is an illusion and that it is impossible to eliminate the nuclear threat to a particular area by declaring it nuclear free.(80)

A NWFZ will not provide the security its proponents suggest. If war should occur, there is nothing to make the WP honor a nuclear free zone. Nor is it in the best interests of NATO to observe such a zone. Since WP units could concentrate massive forces against NATO defenses without fear of being hit by a nuclear strike, their conventional superiority would be exacerbated. Due to the limited range of NATO's nuclear weapons, their use would be on NATO territory. Moreover, nothing protects the NWFZ from attack by nuclear forces outside the zone. This is of particular concern since the WP could reintroduce nuclear weapons more readily than NATO.(81)

Other proponents have argued for a tank free zone (TFZ), with or without a NWFZ. Its purpose would be to reduce the WP's ability to launch a conventional surprise attack, or "bolt out of the blue". Most Western strategists believe that, given adequate warning, NATO can establish a strong enough defense to halt any WP aggression.(82) Allegedly, the TFZ provides the necessary warning time, reducing the Soviet element of surprise so critical for non-nuclear offensive operations. Nonetheless, although this proposal hinders the Soviet ability to attain surprise, it does not eliminate it. Clausewitz professed that surprise is a product of two factors: speed and secrecy.(83) If the Soviets chose to mass large troop formations secretly outside of the TFZ and strike rapidly across it, they could still achieve surprise and seize large portions of NATO territory before NATO could respond.

All of the above proposals accept NATO's strategy of flexible response. Other proposals, however, call for the elimination of all nuclear weapons in Europe. Referred to as the "triple-zero option," the concept has gained support in Western Europe in the wake of a force restructuring plan offered by Mikhail Gorbachev. He proposes to restructure conventional forces within the two alliances so that they could defend against aggression while not retaining the punch to conduct offensive operations.(84) His proposal would eliminate the need for nuclear weapons, since no offensive threat implies no need for a deterrent.

Gorbachev sweetened his offer by acknowledging the need for asymmetrical reductions in conventional force postures between

NATO and the WP.(85) With no need for a conventional force build up, reductions in military budgets would be possible. Accordingly, the prospects of eliminating all nuclear weapons in Europe and asymmetrical force reductions have gained wide support from many different groups. These groups include advocates of a nuclear free Europe, a "defensive" defense strategy, and asymmetrical conventional force reductions, an increasingly powerful lobby.

It is difficult to find fault with such a proposal. If the conventional forces of NATO and the WP were sufficient to deter any aggression, NATO's mission of preserving peace and freedom is accomplished. The difficulty lies in interpretations of "defensive" and in the prospects for an agreement on force levels. The Chief of Staff of the WP recently explained that defensive operations mean not only repelling aggression but counteroffensive operations as well.(86) His view of "defensive" would require little, if any, fundamental restructuring of the conventional forces. This view is not in agreement with what most Western strategists define as defensive forces.

The force level question is particularly sticky. The Soviets, while conceding that they have a greater number of certain types of forces, contend that there is an overall equality within the European theater. General Galvin disagrees and says the WP has far exceeded its force requirements to conduct a successful defense.(87)

The elimination of nuclear weapons and the reduction in conventional forces will not, by themselves, insure greater

stability in Europe. Western strategists eager to eliminate all nuclear weapons and reduce conventional forces in Europe might benefit from reviewing the circumstances that led to the defeat of France in WW II. Smaller conventional forces do not make either Alliance incapable of conducting offensive operations, and winning.

This same logic can be applied to the INF treaty. Even though there will be an asymmetrical reduction of nuclear missiles it does not leave the WP any less capable of conducting offensive operations. At the operational level, the intermediate-range nuclear force was the one nuclear asset SACEUR had to halt WP aggression and regain any lost territory.

#### CONCLUSION

If man does find a solution to world peace, it will be the most revolutionary reversal of his record we have ever known.(88)  
General George C. Marshall.

General Galvin has stated that NATO is not trying to attain a nuclear-free Europe, but a war-free Europe.(89) If the end state is a war-free Europe, the means to get there are varied. The INF treaty is obviously considered one of these means, but is it really? Those who believe that the elimination of nuclear weapons will increase the security of Europe may have forgotten the lesson of May 1940. Since nuclear weapons have come to be regarded as political tools as much as solutions to specific

military problems, their warfighting potential is too often overlooked.(90)

There is an operational imperative for intermediate-range nuclear forces in NATO. Unfortunately, the rationale has never been explained to the people in Western Europe. The military forces in NATO must not be considered individually, but as complete packages to support specific operational concepts. NATO can not afford to negotiate away individual capabilities without assessing the impact upon the defensive posture of the Alliance. Recent statements by General Galvin underscore the importance of this assessment. He has emphasized the need to continue with NATO's modernization efforts and curtail any further nuclear reductions in Europe.(91)

In order for flexible response to be credible, NATO must be able to respond appropriately to any level of potential WP aggression while posing the risk of escalation to higher levels of conflict. To do this it is essential to preserve adequate forces in the three mutually supporting legs of the NATO triad: conventional, theater nuclear and strategic nuclear forces. None of the three legs are independently reducible; the elimination of one will render the triad ineffective. Any significant reduction in one leg reduces the overall effectiveness of the strategy. What is necessary is a balanced, mutually supporting triad that will insure peace in Europe for another forty years.(92)

The need for "buttressing" the theater nuclear leg cannot be overemphasized. It would be imprudent to eliminate theater nuclear forces without any guarantee that an appropriate

substitute can be provided. The question before us now is: Are there viable alternatives? The proposals discussed do not give SACEUR the same operational capability as the PII and GLCM systems. So where do we go from here?

There does not appear to be an operational vision that is directing the future course of NATO force developments. Consequently, the INF treaty will degrade significantly NATO's strategy of flexible response. The fact that the US Congress has restricted both the number of AFAP's to be produced and the Army Tactical Missile System (ATACMS) from being made nuclear capable, emphasizes the need for operational vision within NATO.(93) In 1983 the deficiency in Lance was identified and targeted for modernization. Only this year, however, with the prospect of the INF treaty, was money budgeted to study potential replacements for Lance. An air-to-surface stand off attack missile has yet to be fielded. Although several are in the development and testing stage, reliability and cost remain major obstacles.(94) These inadequacies are further compounded by the Soviets' overwhelming superiority in chemical weapons. Meanwhile, NATO has decided to disallow the storage of US binary rounds on European soil.(95)

If the US Congress should lift the restriction of nuclear warheads on ATACMS, and if it is selected as the follow-on system for the Lance, the question remains as to whether or not NATO will accept its deployment in theater. Even the Secretary of Defense has admitted that although there is a military requirement for nuclear capable systems, their fielding may be politically untenable in Europe.(96)

This concern has been voiced in the report to Congress on  
Nuclear Weapons in the Atlantic Alliance.

Given the intensity of the public debate throughout Western Europe on INF modernization, it is hard to believe that further updating and replacement of nuclear weapons of any kind could easily be undertaken for some years to come.(97)

Is the solution then to do nothing and allow events to dictate future actions? It appears that one solution the US is pursuing is an increase in funding for conventional forces.(98) This effort, however, neglects the distinct firebreak between conventional and nuclear weapons. More conventional forces do not bridge this gap, and deterrence as well as warfighting consequently suffers.

There is an operational imperative for the modernization of NATO's nuclear force. The fielding of the forementioned systems (e.g. Lance, air-to-surface standoff missile, AFAP and ATACMS) will help fill the gap along the continuum of response in the post-INF period. But even if these systems were readily available they do not provide the operational warfighting capability which the PII and GLCM gave SACEUR.

With the PII and GLCM systems SACEUR had the ability to strike deep rapidly, with extreme accuracy and reasonable assurance that these missiles would reach their targets. This capability gave SACEUR an operational system which could impact decisively on major operations of the campaign. With the decision to eliminate the PII and GLCM systems, NATO will surrender its only operationally pure ground launched missile system. Once the INF treaty is ratified it is questionable

whether SACEUR will have the means to restore peace on politically acceptable terms and at an acceptable cost.

The INF treaty is not the panacea of arms control and reduction which so many want it to be.(99) The NPG guidelines recognize the need for a ". . . strong, diverse and flexible nuclear posture."(100) The INF treaty, however, will damage NATO's posture severely by rendering the theater nuclear leg of the triad ineffective. This will also impact upon the strategy of flexible response since the PII and GLCM play a prominent role in its second stage, deliberate escalation. We need to acknowledge the operational imperative for intermediate-range nuclear forces and explain this to the people of Western Europe. We must not attempt to correct the situation under the guise of the Montebello Modernization Decision of 1983.

NATO's nuclear force has made a significant contribution to the preservation of peace in Europe for forty years. The present movement to eliminate nuclear weapons in Europe without commensurate conventional and chemical force reductions is extremely dangerous, especially when this is done without regard to the operational capability of the systems. As we proceed forward it is imperative to remember that it is not weapons that endanger peace but the powers which possess them and use them to threaten others.(101) Negotiation must not become an end in itself, but the means toward an end.

## APPENDIX A

### HIGHLIGHTS OF NATO COMMUNIQUE, DECEMBER 12, 1979

#### "Dual-Track Decision"

- Warsaw Pact has, over the years, developed a large growing capability in nuclear systems that directly threaten Western Europe . . . especially aggravated over the last few years by Soviet decisions to implement programs modernizing and expanding their long-range nuclear capability substantially.
- During this period . . . Western LRTNF capabilities have remained static . . . increasing in age and vulnerability and do not include land based, long-range theater nuclear missile systems.
- Soviets have also undertaken a modernization and expansion of their shorter-range TNF and greatly improved the overall quality of their conventional forces.
- Soviet superiority could . . . cast doubt on the credibility of the Alliance's deterrent strategy by highlighting the gap in the spectrum of NATO's available nuclear response to aggression.
- Recent developments require concrete actions on the part of the Alliance if NATO's strategy of flexible response is to remain credible.
- Deployment in Europe of US ground launched systems comprising 108 Pershing II launchers, which would replace existing US Pershing I-A, and 464 Ground Launched Cruise Missiles (GLCM), all with single warheads. In this connection, Ministers agreed that as an integral part of TNF modernization, 1000 US nuclear warheads will be withdrawn from Europe as soon as feasible . . . the 572 LRTNF warheads should be accommodated within that reduced level.
- Ministers attach great importance to the role of arms control.
- Establishment of agreed limitations on US and Soviet land based long range theater nuclear missile systems.
- The ministers have decided to pursue these two parallel and complementary approaches . . . modernization . . . arms control.(102)

## APPENDIX B

### RATIONALE FOR THE PERSHING II AND GLCM

The following points are the most commonly cited arguments in favor of deployment of the PII and GLCM:

- Improves the robustness of NATO's conventional defense through improved deep strike capability.
- They are accurate, reliable, survivable, travel long range and have the capability to penetrate WP defenses.
- For the first time the Soviet Union was faced with the fact that NATO could strike the Soviet Union with land based weapons.
- A PII launched from Western Europe can strike the Soviet Union with great accuracy within 13 minutes of launch.
- "Couples" the Soviet homeland with the European theater.
- They provided NATO a new capacity to strike at "time urgent" targets, such as missiles.
- They were "deployed not to counter the Soviet SS-20's . . . but rather to fill the gap in our spectrum of deterrence . . ."
- They are more discriminate in their destructive capacity, thereby making their use more credible.
- PII's, when coupled with US strategic forces, keep credibility very high.
- They were designed to replace aging systems such as the F-111s and Vulcans.
- They enhance deterrence by providing NATO with means to respond to a nuclear attack short of a general strategic exchange.
- The Soviet Union has no effective defense against cruise/PII missiles, it would cost them \$50 billion to build such a system.
- They can use mobility and camouflage to avoid Soviet targeting.
- They are powerful, concrete symbols of US commitment to use nuclear weapons, and if needed, to defend NATO
- They are less vulnerable than ALCM's.

## APPENDIX C

### INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY

Under the INF Treaty signed on 8 December 1987 the following missile systems are eliminated:

- \* Intermediate-Range Missile: One with a range of more than 1,000 kilometers but less than 5,500 kilometers.

The existing types recognized under the treaty are:

<u>US</u>	<u>SOVIET</u>
Pershing II	SS-20
BGM-109G (GLCM)	SS-4
	SS-5
	SSC-X-4 (GLCM)

- \* Shorter-Range Missile: One with a range of more than 500 kilometers but less than 1,000 kilometers.

The existing types recognized under the treaty are:

<u>US</u>	<u>SOVIET</u>
Pershing Ia	SS-12/22 (Scaleboard)
Pershing Ib	SS-23 (Scud)

Under this agreement the US will eliminate a total of 830 missiles and the Soviets 1,752 missiles. In terms of nuclear warheads, the US will remove approximately 1,000 warheads and the Soviets some 3,000. The reason for the larger number of Soviet warheads is because a large portion of the Soviet missiles are the triple-warhead SS-20's, while all of the US missiles are single-warheads.

Once the treaty is entered into force, the time frame established for the elimination of the missiles is three years for the intermediate-range missiles and a year and a half for the shorter-range missiles. The items identified for destruction vary for each missile system, but the basic items to be destroyed are the:

Missile	Not included:	Guidance Systems
Launcher		Nuclear Warheads
Support structure		
Support system		

It also bars all further manufacture or flight testing of all ground launched missiles between 500 and 5,500 kilometers.(103)

APPENDIX D  
INF TREATY MISSILE DATA

US

ITEM	Pershing IA	Pershing IB	Pershing II	GLCM
Warheads/missile	1	1	1	1
Range (km)	740	740	1,800	2,500
Operational Flight Time	Minutes	Minutes	Minutes	Hours
Operational Mode	Mobile	Mobile	Mobile	Mobile
Global Number Deployed (Launchers)	72	0	108*	52*
Years Operational	1962		1983	1983

SOVIET

ITEM	SS-22	SS-23	SS-4	SS-5	SS-20	GLCM
Warheads/missile	1	1	1	1	3	1
Range (km)	900	500	2,000	4,100	5,000	
Operational Flight Time			Minutes		Minutes	
Operational Mode			Fixed	Fixed	Mobile	
Global Number Deployed (Launchers)	100*	554*	112	0	441*	
Years Operational	1979	1979	1958	1962	1977	

\* There are additional refires for these launchers.(104)

## APPENDIX E

### NUCLEAR SYSTEMS ALLOWED BY THE INF TREATY

The following "battlefield" nuclear capable systems will still be available in Europe after the INF Treaty is put into effect. To appreciate the balance in nuclear weapon systems fully, however, it is necessary to consider the qualitative attributes of each system. These variables would include accuracy, yield and destructive potential, refire capability, vulnerability to attack and penetration capability. One should also look at how the nuclear arsenals are integrated into the military strategies of NATO and the WARSAW Pact.

### LAND-BASED SYSTEMS FOR BATTLEFIELD SUPPORT

<u>NATO</u>			<u>WARSAW Pact</u>		
SYSTEM	RANGE (km)	# LAUNCHERS	SYSTEM	RANGE (km)	# LAUNCHERS
155mm	24	2,159	240mm	12.7	220
203mm	30	873	152mm	27	3,500
Lance	125	163	203mm	30	164
Nike Hercules	140	443	FROG 7	70	214
			SS-21	120	350
			SS-1c	300	500

The WARSAW Pact has a numerical superiority in battlefield nuclear warheads of 5:1 as NATO now has fewer than 4,600 nuclear warheads.

The nuclear forces of England, France and the Poseidon warheads (SLBM, 400 dedicated to SACEUR), are not included above.

### DUAL CAPABLE AIRCRAFT (DCA)

<u>NATO</u>	<u>WARSAW Pact</u>
1500 A/C	3,000 A/C
F-111, F-4, F-15, F-104, F-16 Tornado, Jaguar (FR), Mirage (FR)	Badger, Blinder, Backfire Fitter, Flogger, Fencer, Fishbed (105)

## ENDNOTES

1. Benjamin F. Schemmer, "Exclusive Interview with Ewald Heinrich von Kleist," Armed Forces Journal International, 125 (February 1988), 44.
2. The greatest threat to NATO is that of being taken by surprise. Should the Soviets attempt a surprise attack . . . NATO might have less than the 48 hours of intelligence lead time projected as the minimum necessary to react. What is more important to remember is that warning is of little use if the means or will to respond are absent. David C. Isby and Charles Kamps, Jr., Armies of NATO's Central Front (London: Jane's Publishing Company Limited, 1985), pp. 23 & 24.
3. A simulated NATO operation, "Carte Blanche", in 1955 using 355 nuclear warheads in defense of Western Europe, resulted in over 5.2 million German casualties. David N. Schwartz, NATO's Nuclear Dilemmas (Washington, D.C.: Brookings Institute, 1983), p. 42. It is important also to realize that "30 per cent of the population and 25 per cent of the industrial capacity of the Federal Republic lies within 100 kilometers of the eastern border . . ." John H. Maurer and Fordon H. McCorm, "Surprise Attack and Conventional Defense in Europe," ORBIS, 27 (Spring 1983), 120.
4. Martin Sleff, "Kohl to Urge Delay in Nuclear Upgrade," Washington Times, 18 February 1988, p. 7. Secretary of Defense, Frank Carlucci, is concerned about having a credible defense should the WP attack. He has implied that if Europe does not modernize its remaining nuclear forces the 325,000 US soldiers deployed in Western Europe would have to be withdrawn. Giovanni Briganti, "Europeans Urged to Modernize Short-Range Nuclear Forces," Defense News, 15 February 1988, p. 12.
5. Even Spurgeon M. Keeny, President of the Arms Control Association, has failed to realize the military implications of the treaty. He stated the INF treaty has "limited military significance, . . . (and) will not alter the nature of the present nuclear standoff." "INF: The Road to Bipartisanship," Arms Control Association, 17 (October 1987), 2.
6. Pat Towell, "Panel Weigh INF Politics, Payoffs for NATO," Congressional Weekly, 6 February 1988, p. 262. Henry Kissinger has voiced the same sentiments as General Rogers. Mr. Kissinger said he would endorse the INF treaty ". . . not because I see any merit in it, but because I think the damage of not ratifying it would be greater." Pat Towell, "Senate Now Turns Scrutiny to INF - and Beyond," Congressional Weekly, 3 January 1988, p. 151. General Rogers has also stated, "like it or not, it became necessary for political credibility to take priority over the credibility of NATO's deterrence. General Bernard W. Rogers, "Arms Control and NATO Deterrence," Global Affairs, III (Winter 1988), 30.

7. US Congress, Department of Defense Appropriations for FY 1986, testimony by General Bernard W. Rogers, SACEUR, on the "NATO Commitment," 99th Congress, 1st Session, 16 May 1985. p. 998. Hereafter cited as Rogers statement to Congress, 16 May 1985.
8. General Bernard W. Rogers, "Greater Flexibility for NATO's Flexible Response," Strategic Review, XI (Spring 1983), 11. It is interesting to note that "the history of the alliance has in fact been a history of excessive reliance on nuclear weapons", Jeffrey Record, "Whither US Troops in a Denuclearized Europe?" Armed Forces Journal International, 124 (October 1987), 76.
9. The North Atlantic Treaty Organization: Facts and Figures (Belgium, NATO Information Service, 1984), p. 15. Mr. Paul-Henri made these comments to the General Assembly because of the territorial expansion of the Soviets. The seven countries were Poland, Eastern Germany, Bulgaria, Albania, Hungary, Rumania and Czechoslovakia.
10. NATO Handbook (Belgium, NATO Information Service, 1985), p. 10.
11. NATO Handbook, p. 17. "This Treaty was, in fact, the first formal alliance concluded by the United States since that concluded with France in 1778 during the Revolutionary War and thus marked a major reversal of American traditional isolationism." Laurence Martin, NATO and the Defense of the West (New York: Nomad Publishers Ltd., 1985), p. 11. Greece and Turkey joined the alliance in 1952, Germany in 1955 and Spain in 1982.
12. Colonel Jean D. Reed, "NATO'S Theater Nuclear Forces: A Coherent Strategy for the 1980's." (Washington, D.C.: NDU, 1983), p. 7. The Lisbon force goals have never been attained. They were further reduced in 1957 by MC 70 which called for 30 active and 30 reserve divisions to provide for a nonnuclear defense of Western Europe. Schwartz, p. 141.
13. He stated this during Senate Hearings in 1951 in support of "Assignment of Ground Forces of the United States to Duty in the European Area," p. 154. As quoted by Schwartz, p. 19. The US also committed itself to provide General Eisenhower as SACEUR, "thereby symbolizing the commitment of American military prestige to the defence of Europe." Martin, p. 11.
14. The SACEUR, General Bradley, saw this need for a conventional and nuclear response. He described, as a NATO military objective, the need "to build sufficient force . . . to act as a deterrent to further aggression . . . ." He made this remark to the House Hearings on the "Department of Defense Appropriations for 1952", pt. 1, p. 204.

15. Schwartz, p. 30. Senator Rudman has also stated this observation. In 1985 he said, ". . . It is obvious to any analyst or planner that nuclear defense is a great deal less expensive than conventional defense in terms of outlaid dollars." DoD Appropriation for FY86, p. 1012.

16. The basic planning document for the New Look, NSC 162/2, approved by President Eisenhower in 1953, stated "the major deterrent to aggression against Western Europe is the manifest determination of the United States to use its atomic capability and massive retaliatory striking power if the area is attacked." Schwartz, p. 24. Colonel John F. Meehan says NSC 162/2 was the formal expression of the doctrine of massive retaliation and was adopted by NATO in the form of MC 14/2 in 1957. "NATO and Alternative Strategies", Parameters, XVI (Spring 1986), p. 16.

17. He made these remarks at the London's Royal United Services Institute in late 1954. It is also interesting that then SACEUR, General Gruenther, approved a study in 1954 that shifted NATO's strategy to place primary focus on nuclear weapons. Schwartz, p. 32.

18. This was further echoed by SACEUR, General Norstad, when he stated that NATO's ground forces were "to hold an attack until the total weight of the retaliatory power could be brought to bear . . . ." Material Security Act of 1958, Senate Hearings, pp. 186-187, as quoted by Schwartz, p. 34.

19. John Cartwright, MP and Julian Critchley, MP., Cruise, Pershing and SS-20. The Search for Consensus: Nuclear Weapons in Europe (Elmsford, N.Y.: Pergamon Press, 1985), p. 3. By this time, 1957, the Soviets had developed a long range bomber force and had made rapid advances in missile technology as evident by the Sputnik launch in this year. These developments challenged the basic assumptions upon which MC 14/2 were based. The question of massive retaliation was also called into question by Henry Kissinger in his book Nuclear Weapons and Foreign Policy, published in 1957.

20. Cartwright, pp. 3 & 8. During this period Secretary of State McNamara moved the US from the strategy of massive retaliation to flexible response. Greater emphasis was also put on the warfighting capability of conventional forces, while at the same time the number of US short range nuclear weapons doubled, between 1963 to 1966, to 7,000 warheads.

21. The Europeans ". . . major preoccupation has been to ensure the closest possible link between the defense of Europe and the American strategic nuclear deterrent . . . they have been equally anxious that the forces at each level should not be so strong as to encourage a nuclear (or conventional) war limited to European territory." Cartwright, p. 6. The Europeans want "to make it impossible for the Soviets ever to believe that they could start and fight a purely conventional war in Europe." Stanley Hoffman.

"NATO and Nuclear Weapons," Foreign Affairs, (Winter 81/82), 332.

22. Flexible Response has not reconciled the differences in the Alliance over the role of nuclear weapons and the defense of Western Europe. Hoffman states that "... the flexible response strategy formally adopted in 1967 was a compromise that resolved nothing." p. 332. If one regards the US as the nuclear "provider" and the Europeans as the "protected" it may be easier to understand why we have differing views on nuclear weapons. The US must think beyond deterrence to employment and resolution, the Europeans think of the systems primarily in terms of their deterrent value. Cartwright p. 6. Victory to them = no war.

23. Rogers statement to Congress, 16 May 1985, p. 998.

24. Rogers statement to Congress, 16 May 1985, p. 1011.

25. General Rogers went on to say it was done "so that the US and NATO could not be faced with an unpalatable choice between either using battlefield nuclear weapons that would devastate West Germany or else ordering an all-out nuclear war with strategic (intercontinental) weapons." Elizabeth Pond, "NATO Chief: Flexibility is Key to Deterrence," The Christian Science Monitor, 27 April 1987, p. 14b.

26. This report was submitted to Congress in compliance with Public Law 93-365. The referenced part is unclassified. Secretary Schlesinger had already put in motion the modernization of all short range nuclear weapons in the US inventory.

27. Chancellor Helmut Schmidt, "The 1977 Alastair Bunchan Memorial Lecture", Survival, 20 (January-February 1978), p. 18.

28. Carl Von Clausewitz, On War. trans. and ed. by Michael Howard and Peter Paret. (Princeton, N.J.: Princeton Univ Press, 1976), p. 579. This is a fundamental weakness in our deterrent strategy: it is intended to only avoid war, not fight it.

29. Rogers, "Arms Control . . .", p. 26. Also see Daniel R. Cotter, et al. The Nuclear Balance in Europe: Status, Trends, Implication, US Strategic Institute Report 83-1, (Washington, D.C.: USSI, 1983), p. 27. This role for nuclear weapons was reaffirmed in the Montebello decision in 1983. The decision "reaffirmed the role of tactical nuclear weapons in Alliance strategy in holding Warsaw Pact forces at risk . . .", Cartwright, p. 47.

30. Cartwright, p. 12. The WP for many years had SS-4 and SS-5 missiles deployed in Eastern Europe with no equivalent system in NATO (Appendix D). Other political considerations which had an influence on the modernization decision included:

- The need for a visible, land based system to ensure coupling.

- Sufficient numbers to ensure credibility of flexible response.
- Not so many to imply there is an ability to fight a theater nuclear war, independent of strategic systems.
- Other NATO countries, not just the FRG, accept deployment.

Also see Rogers, "NATO Chief . . .," p. 146.

31. NATO: Facts and Figures, p. 297. "Most Europeans regarded modernization as the price to be paid for arms control whilst US officials tended to regard arms control as the price needed to achieve modernization." US Congress, Senate Foreign Relations Committee, Report of the Special Committee on Nuclear Weapons in the Atlantic Alliance, 98th Congress, 2d Session, 1 January 1985. Hereafter cited as Report on Nuclear Weapons in the Atlantic Alliance.

32. Cotter, et al., p. 27. Stanley Hoffman says the December 1979 decision "tried to give a military and a political answer to a military problem." "NATO and Nuclear Weapons: Reasons and Unreason," Foreign Affairs 60 (Winter 81/82), p. 333.

33. Michael R. Gordon, "Dateline Washington: INF: A Hollow Victory?" Foreign Policy, 68 (Fall 1987), p. 164. In 1981 Brezhnev called the proposal ". . . an absurd demand that would require the USSR to disarm unilaterally." It appears the Soviets had ". . . doubts about whether the West would succeed in deploying the new missiles (INF)." p. 165.

34. NATO Handbook, p. 13.

35. Clausewitz, p. 77. Sun Tzu stressed the need to "know your enemy and know yourself." Sun Tzu. The Art of War, translated by Samuel B. Griffith, (London: Oxford University Press, 1971). p. 84.

36. D. F. Ustinov, "To Avert the Threat of Nuclear War," Moscow: Novosti, 1982, p. 9. Quoted from Lieutenant Colonel M. Andrew Hulse, "Soviet Force Development and Nuclear Force Reductions," Parameters, XVII (December 1987), 82.

37. George C. Welckhardt, "The Military Consensus Behind Soviet Arms Control Proposals," Arms Control Today, (September 1987), p. 23. General Rogers says "the price of an attack on Western Europe must remain the possibility of triggering an incalculable chain of nuclear escalation." "Follow-On Forces Attack (FOFA): Myths and Realities," NATO Review, 32 (December 1984), p. 9. The year 2000 is coincidentally, the date Gorbachev has set to complete his economic plan to revitalize the Soviet technological and industrial base. Hulse, p. 83.

38. Cotter, et al., p. 8. The correlation of nuclear capabilities with offensive missions is as shown:

DIV OBJ, 50-70 km,	FROG/SS-21 Range
ARMY OBJ, 150-200 km,	SCUD/SS-23 Range

FRONT OBJ 300-350 km, SS-23/SS-22 Range  
THEATER OBJ, Beyond 350 km, SS-4/5 and SS-20 Range  
For the ranges of these weapons, see Appendix D and E.

In 1973 Colonel General N. A. Lomov, in his book, The Revolution in Military Affairs, although conceding that future war may have a conventional phase, stresses "... conventional and nuclear weapons complement each other in their employment . . . .," p.73.

39. Yossef Bodansky, "Nuclear Strike: A Soviet View," Jane's Defense Weekly, 35 (November 1987), p. 1278. General Rogers referred to ZAPAD 81, and the concept of operational maneuver groups (OMG). In the article by Edgar Ulsamer, "The Potential Checkmate In Europe," Air Force, (November 1986), p. 54. "Gorbachev has offered to eliminate all SS-20 and short range missiles in Europe just as Soviet generals have begun to write confidently of the possibility of victory in a protracted, global war . . . .," Weickhardt, p. 24. Also see endnote number 49.

40. Henry van Loon, "Exclusive Interview with General John R. Galvin," Armed Forces Journal International, 125 (March 1988), p. 50. This same remark was repeatedly made by the former SACEUR, General Rogers, he stated that if NATO were attacked, its "... forces would only be able to fight conventionally for less than two weeks . . . .," Rogers, "Arms Control . . . .," p. 25.

41. Catherine M. Kelleher, "Managing NATO's Tactical Nuclear Operations," Survival, XXX (January/February 1988), p. 71. The guidelines developed by the NPG, were approved in October 1986 at Gleneagles, Scotland. The guidelines stress the need to plan nuclear strikes "on the territory of the aggressor, including the Soviet Union." William M. Arkin, "Happy Birthday, Flexible Response," Bulletin of Atomic Scientists, 43 (December 1987), p. 5.

42. General Secretary Gorbachev, Statement on INF, Soviet News, 4 March 1987. Quoted in Survival, 4 (July/August 1987), 361-363. As early as 1982 Soviet military literature begin to emphasize the shift away from reliance on nuclear weapons. Chief of the General Staff Academy General Kozlov, stressed "not to overemphasize the development of nuclear forces at the expense of conventional forces." Meyer, PT I, p. 33.

43. John Templeman, "Why the Arms Treaty Makes West Germany So Nervous," Business Week, 22 February 1988, p. 51. Since 1979 NATO has unilaterally withdrawn 2,400 nuclear warheads from Europe. With 4,600 warheads still in the arsenal there is increased pressure to reduce this number even further.

44. Hulse, p. 83. David C. Isby and Charles Kamps have also stated that "... the 1982 declaration by Chairman Brezhnev, that the Soviet Union would not initiate the use of nuclear weapons . . . shows that the Soviets believe their conventional forces to be capable now of winning in Europe. p. 16. This same

view is expressed by Dr. Fritz Ermath, "The Evolution of Soviet Doctrine," in Adelphi Paper 206, Power and Policy: Doctrine, the Alliance and Arms Control, Spring 1986. He states that no-first use "appears to say something about Soviet views of the desired scenario if there were to be a war," p. 6.

45. US Congress, House Appropriations Committee, testimony by Admiral William J. Crowe, Jr., on Department of Defense Appropriations for 1988. H181-52, pt. 1 of 11, p. 3. Also see remarks by the former Secretary of Defense, Caspar W. Weinberger, p. 5. These force comparisons are also provided in Soviet Military Power 1987, p. 93.

46. James Schlesinger, "Nuclear Deterrence, the Ultimate Reality," The Washington Post, 21 October 1986, p. A17a. Also see Rogers, "Greater Flexibility . . .," p. 14. German Defense Minister Woerner also has the same view. "The Soviets do not want war. They want victory in peace. They are rearming themselves in order to be able to intimidate us." Speech given on 24 June 1983 in Hannover, Germany. As quoted by Dr. Peter Hughes, et al., "Theater Nuclear Force Deployment Issues Facing US Decision Makers," Technical Report prepared for Director, Defense Nuclear Agency, Contract No. DNA 001-82-C-0113, 15 April 1984, p. 36.

47. Congressman Les Aspin, "Conventional Forces in Europe: Unilateral Moves for Stability," Bulletin of the Atomic Scientists, 43 (December 1987), p. 14.

48. David B. Rivkin, Jr. "The Soviet Approach to Nuclear Arms Control: Continuity and Change." Survival, XXXIX (November/December 1987), 507.

49. Bodansky, p. 1280. It is also interesting to note that in the late 70's the "Soviet maneuver divisions had been expanded, reorganized and upgunned . . . giving them more firepower and allowing them to cover greater frontages." In the mid 80's "New type Army Corps" were introduced into the Soviet structure. These units are almost twice as large as current divisions, and are ". . . ideally suited to conduct the high-speed, sustained operations envisioned in Tukachevsky's and Triandafillov's deep-battle concept." Hulse, pp. 87-88.

50. Former Secretary of Defense, Weinberger says the "Soviets seek to dominate Europe without firing a shot." Annual Report to Congress, FY 1988. General Rogers has stated, ". . . the Warsaw Pact's military power eventually may permit the Soviet Union to achieve its long-term goal of domination of Western Europe without having to fire a shot." Rogers, "Greater Flexibility . . .," p. 14. Also see Ulsamer, p. 55.

51. Peter Adams, "INF Provision Raises Questions About Updating NATO Weapons," Defense News, 1 February 1988, p. 12. The Soviet Foreign Minister, Eduard Shevardnadze, made these remarks on 19

January 1988 in Bonn at a meeting with West German leaders. The Soviets do not want NATO to modernize their nuclear force and will undoubtedly make proposals to not modernize theirs if NATO will do the same.

52. Newsweek says the difference in the number of missiles "is somewhat misleading: the Soviets had a real incentive to accept asymmetrical reductions of intermediate forces, because the West gave up the much feared Pershing II missile." Harry Anderson, et al., "Across the Great Divide: NATO on the Imbalance of Conventional Forces," Newsweek, 14 March 1988, p. 33.

53. Pat Towell, "Panel Weigh INF Politics, Pay Offs for NATO," Congressional Weekly, 46 (6 February 1988), 262. The ratification of the INF treaty is viewed as the first step towards the successful negotiation of a strategic arms treaty (START). The INF treaty, if ratified, would be the first congressional treaty since the ABM agreement in 1972.

54. Pat Towell, "INF Treaty: Star Vehicle for Political Agendas," Congressional Weekly, 46 (30 January 1988), 192.

55. Towell, "Panel Weigh . . .," p. 259.

56. Towell, "INF Treaty: Star . . .," p. 193.

57. Rogers, "Greater Flexibility . . .," p. 12.

58. "New NATO Commander Backs Missile Pact," The Washington Post, 31 July 1987, p. A20d.

59. Although the 1983 Montebello Decision does allow for the modernization of NATO's nuclear force, there could be strong resistance within Europe to such "improvements."

60. Thomas B. Cochran, et al. Nuclear Weapons Databook, Volume I: US Nuclear Forces and Capabilities (Cambridge, Mass.: Ballinger, 1984), p. 287. The Nike Hercules is an ground-to-air missile with a secondary role as a surface-to-surface missile.

61. B. H. Liddell Hart, Strategy, p. 322.

62. The operational level of war is the sequencing of battles and major operations to win a campaign, which will lead to the achievement of strategic military objectives. These objectives are developed from military strategy which dictates the employment of military force to achieve national objectives. Operations, FM 100-5, p. 27.

63. Elements of Operational Design, School of Advanced Military Studies, AY 87/88, pp. 8 & 9.

64. Brigadier General Paul F. Pearson, "Bring Up Big Guns In Europe," Army, 38 (April 1988), 43. There is a substantial

difference in the number of artillery pieces within the WP and NATO. Soviet Military Power, 1987, provides the following figures:

	NATO	WP	RATIO
In place/rapid reinforcement	14,200	23,000	1 : 1.6
Fully reinforced	18,300	43,000	1 : 2.4

65. Lieutenant Colonel Peter A. Nell, "NATO and the Neutron Bomb: Necessity or Extravagance," School of Advanced Military Studies, FT Leavenworth, KS. December 1987, p. 10. There is also a limitation on the number of improved AFAPs that the US has available which it can use in Europe. "Because congressional restrictions limit W79 (203mm) and W82 (155mm) production to no more than 925 munitions, we will have to retain some W33s and W48s in the inventory to meet theater commanders' requirements." Weinberger, p. 219.

66. The NATO manual, Land Force Tactical Doctrine, ATP-35A, March 1984, recognizes the importance of disrupting enemy movement but only discusses it in tactical terms. "Targets will be selected primarily where a nuclear strike will not only hit enemy forces but where it will also hamper enemy movement." p. 3-6.

67. Cochran, et al., pp. 284-286. The Lance has a CEP of 375 meters at its maximum distance of 125 kilometers. The PII's CEP at maximum distance is about 40 meters.

68. The deployment of these systems was going to represent equal risk sharing within the Alliance. Their deployment was to be:

NE - 48 GLCM	BE - 48 GLCM	UK - 160 GLCM
ITALY - 112 GLCM	W. GE - 96 GLCM & 108 PII	

69. Secretary of Defense, Frank Carlucci stated, "AFAPs provide a . . . responsiveness that could help defeat large enemy force concentrations near friendly troops." Pearson, p. 43.

70. The nuclear forces in NATO present the WP commander with the dilemma of whether he should concentrate his forces to achieve the correlation of forces for a breakthrough or disperse his forces and increase the possibility of failure. Martin says NATO's nuclear weapons have caused the WP to disperse in an area up to ten times their preferred distance, p. 95.

71. Martin, p. 85. Potential targets include 191 chokepoints and 162 underground command/munitions storage bunkers.

72. Elizabeth Pond, "Maintaining Credible Deterrence in Europe," The Christian Science Monitor, 30 April 1987, p. 16a+.

73. Elements of Operational Design, p. 10.

74. Clausewitz, pp. 357 and 84 & 390.

75. Eric H. Thoemmes, "NATO Strategy and the INF Treaty," Global Affairs, III (Spring 1988), p. 55.

76. The PII and GLCM systems provide greater range, accuracy, survivability, reliability and penetration capability than any other nuclear systems. For the first time SACEUR has the capability to strike the Soviet homeland with ground launched missiles.

77. If the WP launched on warning this would effectively eliminate any escalation control. General John R. Galvin, "NATO After Zero INF," Armed Forces Journal International, 125 (March 1988), p. 56. He goes on to say "[t]here are no indications of any implementation of Gorbachev's defense concept of reasonable sufficiency."

78. This proposal raises the question about the 400 SLBMs assigned to SACEUR (Appendix D). General Rogers says "whether we like it or not the Soviet Union . . . can't identify those (SLBMs) that are assigned to SACEUR and those that are not assigned to SACEUR. Pond, "Maintaining Credible . . .," p. 36c. Although the Soviets have said they regard the PII as a strategic system, it is distinguishable from our strategic arsenal. This feature enhances the value of the PII as part of the "linkage" in the deliberate escalation stage.

79. Report on Nuclear Weapons in the Atlantic Alliance, 1 January 1985, pp. 13 & 14. The report also makes the point that the US Navy has 758 nuclear armed SLCMs designated for land attack.

80. Merrye Atkinson and Mary S. Keith, "Exclusive Interview with General B. W. Rogers," International Combat Arms, 4 (July 1986), p. 61. This zone will not be able to insure there is no devastation caused by war. The effects of conventional war can be more devastating than nuclear war. The conventional bombing of Dresden in WW II produced more casualties than the atomic bomb dropped on Hiroshima.

81. Most of these proposals assume all of the nuclear powers in Europe, to include England and France, will agree to this zone. It is doubtful England and France will accept limitations being placed upon their independent nuclear forces.

82. Anderson, et al., p. 33.

83. Clausewitz, p. 198. General Galvin even says "that of all the principles of war the Soviets value surprise above any other." Loon, p. 52.

84. Jack Snyder, "Limiting Offensive Conventional Forces," International Security, 12 (Spring 1988), p. 51. As quoted from Pravda, 17 September 1987. He also points out that the Soviet arms negotiator Viktor Karpov says this proposal would require

scrapping nuclear weapons, and reducing the number of tanks, tactical aircraft and attack helicopters. p. 48.

85. Snyder, p. 49. As quoted from Pravda, 11 April 1987.

86. Snyder, p. 54. Statements by General A. I. Gribkov, as quoted from the Foreign Broadcast Information Service (FBIS), 30 September 1987, p. 7. Snyder goes on to say that within the Soviet Union the military and civilian sectors do not even agree on what "defensive means." p. 56.

87. General Galvin, "NATO After Zero INF," p. 56. He also states the conventional face-off in Europe is not reassuring . . . (and) there is no sign of slackening in the Pact's efforts to build its military power."

88. As quoted by Senator Sam Nunn, "NATO Challenges and Opportunities: A Three-Track Approach," NATO Review, 35 (June 1987), p. 8.

89. Margaret Thatcher, "Judge the Soviets by Actions, Not Words," ROA National Security Report, 5 (12 December 1987), p. 2. Speech given in England on 9 October 1987.

90. Arkin, p. 5.

91. Galvin, p. 54.

92. The triad of forces, requires the Soviets to solve a number of different problems in their planning efforts to overcome them. NATO must make their planning for an attack as difficult as possible. If the Soviets were able to concentrate their research and development efforts on putting only one or two components of the NATO triad at risk, both their incentive to do so and their potential would be sharply increased.

93. If greater reliance is going to be placed on the use of AFAPs then some changes in the development and deployment must occur. The US Congress has established a limitation on the number of modernized rounds that can be produced. (W79 - 203mm, and W82 - 155mm, production are limited to no more than 925 munitions, some W33s and W48s will remain in the inventory to meet theater commanders' requirements. Weinberger, p. 219.) NATO has also prohibited the deployment of any munitions in Western Europe that have enhanced radiation warheads. The cost to modernize the AFAPs is also considerable, ten times the amount of the present nuclear munition.

94. Debra Polsky, "Lance Replacement Study Makes Latest Army Budget," Defense News, 8 February 1988, p. 3c. The Army budget for 1989 has \$15 million earmarked to find a replacement for the Lance system. Dan Beyers, "Pentagon Reviews Services Standoff Missile Programs to Prevent Duplication," Defense News, 15

February 1988, p. 3a. The article refers to the confusing plethora of air-to-surface missile programs within the services.

95. National Security Strategy, p. 1001. Senator John Glenn, discussed with General Rogers the US decision to withdraw its chemical weapons from Europe and not replace them. This unilateral elimination was made worse by the US agreement to allow NATO "... to refuse, even in time of crisis, to allow the deployment of the new binary weapons." Jonathan Dean, "Chemical Weapons in Europe A Missed Opportunity for Arms Control," Arms Control Today, 16 (September 1986), pp. 14-16. Also see "Rogers: Chemical Deterrence Is Imperative," National Guard, May 1985, pp. 27-28.

96. Adams, p. 12. Frank Carlucci, stated "[a]lthough longer range tactical nuclear missiles make military sense they may be politically untenable in Europe."

97. Report on Nuclear Weapons in the Atlantic Alliance, 1 January 1985, p. IX

98. Adams, p. 12.

99. Peter Adams, "DoD Shows Commitment to Upgrade Conventional Forces in Europe," Defense News, 22 February 1988, p. 5a. He stresses that "... US and NATO conventional forces will enjoy considerable immunity from budget cutters through the 1990s." As an example, NATO Research and Development funding will increase from \$36 million in 1987 to \$200 million in 1989 and advanced technology for the Army will be \$39.4 million in 1989 as compared to \$24.9 million in 1988.

100. Nato Facts and Figures, p. 153.

101. Hughes, et al., p. 37.

102. NATO Facts and Figures, pp. 295-297.

103. As extracted from numerous sources.

104. Congressional Quarterly, "Text of Treaty on Intermediate-Range Missiles," 12 December 1987, pp. 3070-3085. Also see a one page summary by Pat Towell on the treaty highlights, "Rules, Timetables: What the Pact Would Do," Congressional Weekly, 23 January 1988, p. 150.

105. Pond, "NATO Chief . . .," p. 14b. Cartwright, pp. 15-16. Military Posture, p. 45. The Nuclear "Balance" in Europe: Status, Trends, Implications, pp. 41-45. The Military Balance, 1986-1987, pp. 207-208. Rogers, "Arms Control . . .," p. 31.

106. The Military Balance, 1986-1987, pp. 200-208. Soviet Military Power, pp. 40-41. Cartwright, p. 50. Cochran, p. 310.

## BIBLIOGRAPHY

### BOOKS

Cartwright, John, MP and Julian Critchley, MP. Cruise, Pershing and SS-20. The Search for Consensus: Nuclear Weapons in Europe. Elmsford, N.Y.: Pergamon Press, 1985.

Clausewitz, Carl Von. On War. trans. and ed. by Michael Howard and Peter Paret. Princeton, N.J.: Princeton Univ Press, 1976.

Cochran, Thomas B. et al. Nuclear Weapons Databook, Volume I: US Nuclear Forces and Capabilities. Cambridge, Mass.: Ballinger Publishing Co., 1984.

Gray, Colin S. Nuclear Strategy and Strategic Planning. Philadelphia, PA: Foreign Policy Research Institute, 1984.

Isby, David C. and Charles Kamps, Jr. Armies of NATO's Central Front. London: Jane's Publishing Company Limited, 1985.

Liddell Hart, B. H. Strategy. New York, N.Y.: Praeger Publishers, Inc., 1967.

Martin, Laurence. NATO and the Defense of the West. New York: Nomad Publishers Ltd., 1985.

Mearsheimer, John J. Conventional Deterrence. Ithaca, N.Y.: Cornell Univ. Press, 1983.

Schwartz, David N. NATO's Nuclear Dilemmas. Washington, D.C.: Brookings Institute, 1983.

Sun Tzu. The Art of War. translated by Samuel B. Griffith, London: Oxford University Press, 1971.

Treverton, Gregory F. Making the Alliance Work: The United States and Western Europe. Ithaca, N.Y.: Cornell University Press, 1985.

The Military Balance, 1986-1987. London: The International Institute for Strategic Studies, 1986.

Vigor, Peter H. Soviet Blitzkrieg Theory. New York, N.Y.: St. Martin's Press, Inc., 1983.

Von Mellenthin, F.W., R.H.S. Stalfl and E. Sobik NATO under Attack. Durhan, N.C.: Duke University Press, 1986.

## GOVERNMENT PUBLICATIONS

Elements of Operational Design. School of Advanced Military Studies, FT Leavenworth, KS., AY 87/88.

"Joint Communique Lays Out Talking Points," Congressional Quarterly. (12 December 1987), p. 3064.

NATO Handbook. Brussels, Belgium: NATO Information Service, 1985.

North Atlantic Treaty Organization. Land Force Tactical Doctrine. ATP-35(A). March 1984,

North Atlantic Treaty Organization: Facts and Figures. Brussels, Belgium: NATO Information Service, 1984.

Quayle, Senator Dan "After INF: The NATO Defense Initiative." Congressional Record. 21 December 1987, pp. S18877-S18879.

Quayle, Senator Dan "INF and Our Cruise Missile Future." Congressional Record. 11 December 1987, pp. S18019-S18022.

Quayle, Senator Dan "INF: Two More Treaty Concerns." Congressional Record. 17 December 1987, pp. S18291-S18295.

Quayle, Senator Dan "The INF Treaty." Congressional Record. 4 December 1987, pp. S17343-S17347.

Report of the Commission On Integrated Long-Term Strategy, Discriminate Deterrence. Fred C. Ikle and Albert Wohlstetter, et al., January 1988.

"Text of Treaty on Intermediate-Range Missiles." Congressional Quarterly, (12 December 1987), pp. 3070-3085.

"The Intermediate-Range and Shorter-Range Missiles Treaty." Congressional Digest. April 1988.

Towell, Pat "Inf Treaty: Star Vehicle for Political Agendas." Congressional Weekly, 30 January 1988, pp. 192-197.

Towell, Pat "Panel Weigh INF Politics, Payoffs for NATO." Congressional Weekly, 6 February 1988, pp. 259-264.

Towell, Pat "Rules, Timetables: What the Pact Would Do." Congressional Weekly, 23 January 1988, p. 150.

Towell, Pat "Senate Now Turns Scrutiny to INF - and Beyond." Congressional Weekly, 23 January 1988, pp. 151-154.

U.S. Congress, Department of Defense Appropriations for FY 1986, testimony by General Bernard W. Rogers, SACEUR, on "NATO

Commitment," 99th Congress, 1st Session, 16 May 1985. pp. 993-1060. (S181-23.10)

U.S. Congress, Department of Defense Appropriations for FY 1988. testimony by Admiral William J. Crowe, Jr., on "Fiscal Year 1988 Defense Posture," 100th Congress, 1st Session, 1987. (H181-52, 1 of 11)

U.S. Congress, Senate Foreign Relations Committee, Report of the Special Committee on Nuclear Weapons in the Atlantic Alliance. 98th Congress, 2d Session, 1 January 1985. (S382-2)

U.S. Congress, testimony by General Bernard W. Rogers on National Security Strategy, 1987, pp. 921-980. (S201-12)

U.S. Department of the Army. Operations. Field Manual 100-5. Washington, D.C.: US Government Printing Office, 1986.

U.S. Department of Defense. The Theater Nuclear Force Posture in Europe. Report to Congress in compliance with Public Law 93-365. Washington, D.C.: US Government Printing Office, 1975.

U.S. Department of State. The Washington Summit and the INF Treaty. Department of State Publication 2131. Washington, D.C.: US Government Printing Office, February 1988.

United States Military Posture For FY 1988. Prepared by the Joint Staff, 1987.

Weinberger, Caspar W. Annual Report to the Congress, Fiscal Year 1988. Washington, D.C.: US Government Printing Office, 1987.

#### NEWSPAPER ARTICLES

Buckley, William "Let Us Not Add Yet Another Zero to Disarmament Program." The Kansas City Times, 9 February 1988, p. 12a.

Burt, Richard R. "The Right Lessons of INF Treaty." Wall Street Journal, 7 January 1988, p. 18a.

Carrington, Tim "West Germany's Disarmament Paranoia Is Beginning to Bother Its NATO Allies." Wall Street Journal, 10 February 1988, p. 9b.

Dewar, Helen "NATO Commander Galvin Defends INF Treaty, Disputes Predecessor." The Washington Post, 3 February 1988, p. 4a.

Gordon, Michael R. "Commander of NATO Is Opposed to Ridding Europe of All Missiles." The New York Times, 21 April 1987, p. A6a.

Hiatt, Fred "McNamara Suggests Eliminating A-Arms from NATO Defense." The Washington Post, 15 September 1983, p. A15a.

"New NATO Commander Backs Missile Pact." The Washington Post, 31 July 1987, p. A20d.

Lee, Gary "Top Kremlin Official Back Missile Cuts." The Washington Post, 10 February 1988, p. 21.

Pond, Elizabeth "NATO Chief: Flexibility Key to Deterrence." The Christian Science Monitor, 27 April 1987, p. 14b.

Pond, Elizabeth "Maintaining Credible Deterrence in Europe." The Christian Science Monitor, 30 April 1987, p. 16a+.

Pond, Elizabeth "In Farewell, NATO Chief Voices Concern on Arms Deal." The Christian Science Monitor, 29 June 1987, p. 15b.

Rogers, General B.W. "Why Compromise Our Deterrent Strength in Europe?" The New York Times, p. E25a.

Schlesinger, James R. "Nuclear Deterrence, the Ultimate Reality." The Washington Post, 21 October 1986, p. A17a.

Sleff, Martin "Kohl to Urge Delay in Nuclear Upgrade." Washington Times, 18 February 1988, p. 7.

"Why Compromise Our Deterrent Strength in Europe?" The New York Times, 28 June 1987, p. E25a.

Wilson, George C. "INF Ignites Drive for Smart Weapons." The Washington Post, 28 January 1988, p. 4a.

#### PERIODICALS

Adams, Peter "DoD Shows Commitment to Upgrade Conventional Forces in Europe." Defense News, 22 February 1988, p. 5a.

Adams Peter "INF Provision Raises Questions About Updating NATO Weapons." Defense News, 1 February 1988, p. 12.

Adams, Peter "Soviet Union Presses US to Abandon Binary Chemical Weapon Production." Defense News, 11 January 1988, p. 10c.

Amiel, Soodia. "Deterrence by Conventional Forces." Survival, 20 (March-April 1978), 55-62.

Anderson, Harry, John Barry, et al., "Across the Great Divide: NATO on the Imbalance of Conventional Forces." Newsweek, 14 March 1988, p. 33.

Arkin, William M. "Happy Birthday, Flexible Response." Bulletin of Atomic Scientists, 43 (December 1987), 5-6.

Aspin, Congressman Les "Conventional Forces in Europe: Unilateral Moves for Stability." Bulletin of the Atomic Scientists, 43 (December 1987), 12-15.

Atkinson, Merrye and Mary S. Keith, "Exclusive Interview with General B. W. Rogers." International Combat Arms, 4 (July 1986), 61.

Barry, John and Russell Watson, "Can Europe Stand on Its Own Feet?" Newsweek, 7 December 1987, pp. 31-37.

Berkowitz, Bruce D. "An INF Treaty Discredits Arms Control and Promotes Conflict." Orbis, 32 (Winter 1988), 119-126.

Beyers, Dan "Pentagon Reviews Services' Standoff Missile Programs to Prevent Duplication." Defense News, 15 February 1988, p. 3a+.

Binder, L. James "General Rogers: Time to Say 'Time Out'." Army, 37 (September 1987), 20-38.

Bodansky, Yossef "Nuclear Strike: a Soviet View." Jane's Defence Weekly, November 1987, pp. 1278-1280.

Briganti, Giovanni "Europeans Urged to Modernize Short-Range Nuclear Forces." Defense News, 15 February 1988, p. 12a.

Dean, Jonathan "Chemical Weapons in Europe: A Missed Opportunity for Arms Control." Arms Control Today, 16 (September 1986), 14-18.

Dean, Jonathan "The INF Agreement: Pluses and Minuses for Western Security." Arms Control Today, 17 (July/August 1987), 3-10.

Dean, Jonathan "Military Security in Europe." Foreign Affairs, 66 (Fall 1987), 22-40.

Galvin, General John R. "NATO After Zero INF." Armed Forces Journal International, 125 (March 1988), 54-60.

Galvin, General John R. "The INF Treaty-No Relief from the Burden of Defense." NATO Review, 36 (February 1988), pp. 1-7.

Gordon, Michael R. "Dateline Washington: INF: A Hollow Victory?" Foreign Policy, 68 (Fall 1987), 159-179.

Hoffman, Stanley "NATO and Nuclear Weapons: Reasons and Unreason." Foreign Affairs, 60 (Winter 81/82), 327-346.

Howard, Michael "On Fighting a Nuclear War." International Security, 5 (Spring 1981), 3-17.

Hulse, Lieutenant Colonel M. Andrew. "Soviet Force Development and Nuclear Arms Reductions." Parameters, XVII (December 1987), 81-90.

Huntington, Samuel P. "Conventional Deterrence and Conventional Retaliation in Europe." International Security, 8 (Winter 1983-84), 32-56.

"INF Treaty Wrapped Up for Summit Signing." Arms Control Today, (December 1987), 22.

"International Security Council Strategic Assessment: 1988." Global Affairs, (Winter 1988), 1-22.

James, Jesse "Shevardnadze Calls For Triple-Zero Option." Arms Control Today, 18 (March 1988), 24.

Kelleher, Catherine M. "Managing NATO's Tactical Nuclear Operations." Survival, XXX (January/February 1988), 59-78.

Keeny, Spurgeon M. "INF: The Road to Bipartisanship." Arms Control Association, 17 (October 1987), 2.

Loon, Henry van "Exclusive Interview with General John R. Galvin." Armed Forces Journal International, 125 (March 1988), 50-52.

Maurer, John H. and Gordon H. McCormick, "Surprise Attack and Conventional Defense in Europe." ORBIS, 27 (Spring 1983), 107-126.

McNamara, Robert S. "The Military Role of Nuclear Weapons: Perceptions and Misperceptions." Foreign Affairs, 62 (Fall 1983), 1041-1057.

Meehan, Colonel John F. "NATO and Alternative Strategies." Parameters, XVI (Spring 1986), 14-23.

Nunn, Senator Sam "NATO Challenges and Opportunities: A Three-Track Approach." NATO Review, 35 (June 1987), 1-8.

"One Class of Nuclear Weapon Bound for Extinction." International Defense Review, 1/1988, 11-12.

Pearson, Brigadier General Paul F. "Bring Up Big Guns In Europe." Army, 38 (April 1988), 42-46.

Polisky, Debra "Lance Replacement Study Makes Latest Army Budget." Defense News, 8 February 1988, p. 3c+.

Record, Jeffrey "Whither US Troops in a Denuclearized Europe?" Armed Forces Journal International, 124 (October 1987), 76-80.

Reagan, President Ronald "The Deployment of Nuclear Weapons." The Atlantic Community, 19 (Winter 1981/1982), 387-394. Address given on 18 November 1981 to the National Press Club.

"Rogers : Chemical Deterrence Is Imperative." National Guard, (May 1985), 27-28.

Rogers, General Bernard W. "Arms Control and NATO Deterrence." Global Affairs, III (Winter 1988), 23-40.

Rogers, General Bernard W. "Follow-On Forces Attack (FOFA): Myths and Realities." NATO Review, 32 (December 1984), 1-9.

Rogers, General Bernard W. "Greater Flexibility for NATO's Flexible Response." Strategic Review, XI (Spring 1983), 11-19.

Rudd, William T. "Military Strategy, The Forgotten Art." Air University Review, (July-August 1980), 86-93.

Schemmer, Benjamin F. "Exclusive Interview with Ewald Heinrich von Kleist." Armed Forces Journal International, 125 (February 1988), 40-46.

Schmidt, Chancellor Helmut "The 1977 Alastair Bunchan Memorial Lecture." Survival, XX (January/February 1978), 2-10. Address given on 28 October 1977.

Senghaas, Dieter "Dismantle Offense, Strengthen Defense." Bulletin of Atomic Scientists, (December 1987), 9-11.

Snyder, Jack "Limiting Offensive Conventional Forces." International Security, 12 (Spring 1988), 48-77.

Templeman, John "Why the Arms Treaty Makes West Germany So Nervous." Business Week, 22 February 1988, p. 51.

Thatcher, Margaret "Judge the Soviets by Actions, Not Words." ROA National Security Report, 5 (12 December 1987), 2. Speech given in England on 9 October 1987.

Thoemmes, Eric H. "NATO Strategy and the INF Treaty." Global Affairs, III (Spring 1988), 46-62.

Ulsamer, Edgar. "The Potential Checkmate in Europe." Air Force, 69 (November 1986), 54-57.

Vigor, P. H. "Doubts and Difficulties Confronting a Would-be Soviet Attacker." RUSI Journal, 125 (June 1980), 28-32.

Welckhardt, George G. "The Military Consensus Behind Soviet Arms Control Proposals." Arms Control Today, 17 (September 1987), 20-24.

Weiseltier, Leon. "When Deterrence Fails." Foreign Affairs. (Spring 1985), 1121-1140.

Wolfgang, Samuel. "The Impossible Task - Defense without Relevant Strategy." Air University Review, (March-April 1980), 15-28.

#### THESES AND PAPERS

Cotter, Donald R., James H. Hansen and Kirk McConnell, "The Nuclear Balance in Europe: Status, Trends, Implications," USSI Report 83-1. US Strategic Institute, Cambridge, MA., 1983.

Ermath, Dr. Fritz "The Evolution of Soviet Doctrine." in Adelphi Paper 206, Power and Policy: Doctrine, the Alliance and Arms Control, Spring 1986, 3-10.

Freeman, LTC Waldo D., "NATO Central Region Forward Defense: Correcting the Strategy/Force Mismatch." NSA Series 81-3. National Defense University Press, Washington, D.C., 1981.

Hughes, Dr. Peter; et al., "Theater Nuclear Force Deployment Issues Facing US Decision Makers." Technical Report prepared for Director, Defense Nuclear Agency, Contract No. DNA 001-82-C-0113. 15 April 1984.

Meyer, Stephen M. Soviet Theatre Nuclear Forces, Part I: Development of Doctrine and Objectives. Adelphi Paper No. 187, International Institute for Strategic Studies, Great Britain. Winter 1983/4.

Meyer, Stephen M. Soviet Theatre Nuclear Forces, Part II: Capabilities and Implications. Adelphi Paper No. 188, International Institute for Strategic Studies, Great Britain. Winter 1983/4.

Nell, Lieutenant Colonel Peter A. "NATO and the Neutron Bomb: Necessity or Extravagance." Monograph, School of Advanced Military Studies, US Army Command and General Staff College, FT Leavenworth, KS., December 1987.

Reed, Colonel Jean D., "NATO's Theater Nuclear Forces: A Coherent Strategy for the 1980s." NSA Monograph Series 83-8, National Defense University Press, Washington, D.C., 1983.

Rios, Major Leon H. "The Linkage of the Strategic and Operational Levels of War." Monograph, School of Advanced Military Studies, US Army Command and General Staff College, FT Leavenworth, KS., 12 May 1986.

END

DATED

FILM

8-88

DTIC